Supporting Data FY 1998/1999 Budget Estimate Submitted to Congress - February 1997

DESCRIPTIVE SUMMARIES OF THE



RESEARCH, DEVELOPMENT, TEST AND EVALUATION Army Appropriation, Budget Activities 4 and 5

Office of the Secretary of the Army (Financial Management and Comptroller) Department of the Army

"READINESS THROUGH MODERNIZATION"

VOLUME |

19970314 034

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DESCRIPTIVE SUMMARIES FOR PROGRAM ELEMENTS RESEARCH, DEVELOPMENT, TEST AND **EVALUATION, ARMY FEBRUARY 1997** FY 1998/1999 OF THE

VOLUME II Budget Activities 4 and 5

Office of the Assistant Secretary of the Army (Financial Management and Comptroller) Department of the Army

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FY 1998/1999 RDT&E, ARMY PROGRAM ELEMENT DESCRIPTIVE SUMMARIES

INTRODUCTION AND EXPLANATION OF CONTENTS

- Development, Test and Evaluation program. The Descriptive Summaries are comprised of R-2 (Budget Item Justification Sheet) 1. General. This section has been prepared for the purpose of providing information concerning the Army Research, and R-3 (RDT&E Program Element/Project Cost Breakdown) Exhibits which provide narrative information on all RDT&E program elements and projects for the FY 1996, 1997, 1998 and 1999 time period.
- paragraph provides a list of program elements restructured, transitioned, or established to provide specific program identification. 2. Relationship of the FY 1998/1999 Budget Submission to the FY 1997 Budget submitted to Congress. This
- A. Program Element Restructures. Explanations for these changes can be found in the narrative sections of the Program Element R-2/R-3 Exhibits.

OLD		NEW
PE/PROJECT	NEW PROJECT TITLE	PE/PROJECT
0601102A/S16	Science Base/Combat Casualty Care	0601102A/S14
	Research	
0602618A/H81, 0603004A/43A	Liquid Propellant Technology Program	0602618A/H37
0602624A/H28	Fuze Technology	0602624A/H36
0602712A/H24	Camouflage Technology	0602712A/H35
0602785A/791	Personnel System/Performance	0602785A/790
	Technology	
0602787A/825	Combat Casualty Care Technology	0602787A/874
0603001A/XXA	Force XXI Land Warrior	0603001A/J50
0603003A/D368	Improved Cargo Helicopter	0203744A/D430
0603004A/L95	Landmine Warfare Dev	0603004A/43A
0603007A/793	Training Sys and Education	0603007A/792
0603313A/D380	Guided MLRS	0603778A/D784
0604760A/DC77	Computer Generated Forces	0604760A/DC78
0605601A/DE90, DE91,DE92, DE93,	Army Test Ranges and Facilities	0605601A/DF30
D618,D632 & D630		

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A. Program Element Restructures (continued).

OLD		NEW
PE/PROJECT	NEW PROJECT TITLE	PE/PROJECT
0605601A/D630	Non-Major System Test & Design Evaluation	0605601A/D699
0605641A/D670, D671, D672, D672, D675 & D678	Survivability Evaluation	0605604A/D734
0605706A/D026	Major Systems Test, Design and Evaluation	0605706A/M542
0303142A/D384 & /D386	Automated Communications Management System	0303142A/D559

B. FY 1998 Developmental Transitions.

TO	PE/PROJECT	Dismounted Soldier Combat Identification (CID) 0604817A/D902	0603313A/549	n 0604802A/284
	PROJECT TITLE	Dismounted Soldier Combat Ident	2.75" Anti-Air Tech Demo	Multi-Purpose Individual Munition
FROM	PE/PROJECT	0602120A/AH15	0602303A/214	0603313A/387

remaining programs listed are outyear initiatives or restructures beyond FY 1998 or were previously funded from other Defense C. Establishment of New FY 1998 Program Elements/Projects. There are no major system new starts. Minor new initiatives for FY 1998, in addition to Congressionally directed initiatives for FY 1997, are shown below with asterisks. The appropriations.

TITLE	PE/PROJECT
Voice Instructional Device*	0602601A/AH39
Plasma Energy Pyrolysis System*	0602720A/A876
Western Environmental Technology Office (WETO)	0602720A/A877
Environmental Support*	
Neurotoxin Exposure Treatment*	0602787A/A838
Cancer Signal/Cancer Cell Proliferation*	0602787A/A839
Computer-Assisted Minimally Invasive Surgery*	0602787A/A841
ENT Minimally Invasive Simulation*	0602787A/A842





C. Establishment of New FY 1998 Program Elements/Projects (continued).

TYTY E.	PE/PROJECT
Health Technology Roadmaps*	0602787A/A843
Hepatitis A Vaccine*	0602787A/A844
Trichloromelamine*	0603002A/D813
Neurofibromatosis*	0603002A/D814
National Medical Testbed*	0603002A/D815
Computer-Based Decision Support Systems*	0603002A/D816
Computer-Aided Diagnostic Research*	0603002A/D817
Advanced Cancer Detection Center*	0603002A/D818
Nautilus/THEL*	0603308A/D989
Battle Integration Center*	0603308A/D997
LCPK for 2.75 Inch Rockets	0603313A/A567
Advanced Light Anti-Armor Weapon System (ALAWS)*	0603607A/D664
Future Combat System	0603645A/DQ19
LTASS	0603774AD598
Future Scout Vehicle - Advanced Development*	0603645A/D018
Suite of Integrated Infrared Countermeasures Op Test*	0604270A/D2VT
Arm Treatment & Transport Vehicle	0604640A/DG28
Future Scout Vehicle - EMD	0604645A/D022
Mounted Warrior*	0604713A/D680
XM982*	0604802A/D695
Army Systems Engineering & Warfighting Technical Spt*	0604805A/D589
Modernization of Utilities*	0605678A/M744
Survivability Evaluation	0605604A/D734
Ground Combat Vehicle HTI*	0203735A/D718
Bradley A3 P3I (BFV A4)	0203735A/D377
Guardrail Common Sensor	0203744A/D028
UH-60 Door Gun*	0203744A/D504
Force XXI Initiatives*	0203758A/D376
Longbow Hellfire PIP	0203802A/D785
Joint Precision Approach Landing System (JPALS)	0305114A/D711
MLRS Army Technical Architecture*	0603778A/D093
Weapons Systems Modernization Software Maintenance	0708045A/DE26

D. FY 1998 programs for which funding was shown in the FY 1997 President's Budget Submit (February 1996), but which are no longer funded.

PE/PROJECT	TITLE	BRIEF EXPLANATION
0203735A/D2UT	Abrams IOTE	Funds transferred to system line.
0601101A/91E	ILIR-ARI	Program terminated
0601102A/S16	Science Base/Combat Dentistry Research	Program terminated
0602120A/H25	Nuc Effects Surv Tech	Program terminated
0602624A/H23	Non-Lethal Weapons Technology	Program terminated
0602783A/094	Tactical Software Technology	Program terminated
0603627A/E79	Smoke, Obscurant - Advanced Development	Funds transferred to system line
0602787A/825	Combat Maxillofacial Injury	Program terminated
0603001A/594	Metrology & Calibration	Program terminated
0603001A/J28	Test Measurement Technology Development	Program terminated

Descriptive summaries for PE 0603806A - NBC Defense Systems, AD and PE 0604806A - NBC Defense Systems, ED are not provided in this Army submission. Since these programs were transferred to Defense RDT&E in FY 1996, program details are available in the Defense RDT&E submission under PE 0603884BP and PE 0604384BP.

3. Classification. This document contains no classified data. Classified/Special Access Programs which are submitted offline are listed below.

0603003A/DB38/D391 0603710A/DC63		1A 0604649A/DG15	'A 0604328A/DC71	1A)A	<i>Y</i>
0		0602601A/AC84/DC83 0603013A	A 0603017A	A 0603018A	A/AC61 0603020A	A/AC60 0603322A
0203735A/DC64	0203808A	0602601.	0602104A	0602122A	0602712A/AC61	0602786A/AC60



Department of the Army FY 1998/1999 RDT&E Program

Summary			Da	Date: Feb 1997
			Thousan	Thousands of Dollars
	FY 1996	FY 1997	FY 1998	FY 1999
Summary Recap of Budget Activities				
Basic Research	181,722	179,059	198,854	210,349
Applied Research	450,837	551,558	462,935	493,665
Advanced Technology Development	580,033	677,676	418,322	431,696
Demonstration and Validation	454,454	558,250	523,395	445,831
Engineering and Manufacturing Development	1,124,738	1,141,159	1,107,393	1,162,925
RDT&E Management Support	1,234,657	1,072,165	1,136,576	1,108,382
Operational Systems Development	730,971	750,761	663,368	643,876
Total Research Development Test & Eval Army	4,757,412	4,930,628	4,510,843	4,496,724
Summary Recap of FYDP Programs				
Strategic Forces	4,000	26,376	86,193	134,298
General Purpose Forces	560,107	541,129	403,355	354,129
Intelligence and Communications	64,814	72,633	89,316	68,413
Research and Development (FYDP Program 6)	4,094,970	4,242,671	3,874,153	3,874,693
Central Supply and Maintenance	23,699	47,819	44,326	50,086
Administration and Assoc Activities	322	0	0	0
Support of Other Nations	6,500	01	13,500	15,105
Total Research Development Test & Eval Army	4,757,412	4,930,628	4,510,843	4,496,724

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Exhabit R-1

FY 1998/1999 RDT&E Program Department of the Army

Appro	priation: 204	Appropriation: 2040 A Reserach Development Test & Eval Army	0			Date	Date: Feb 1997
rdda.	Program					Thousand	Thousands of Dollars
Line			Act	FY 1996	FY 1997	FY 1998	FY 1999
No	Number	Item					
,	0601101A	IN-HOUSE LABORATORY INDEPENDENT RESEARCH	_	13,657	14,393	15,113	15,828
7	0601102A	DEFENSE RESEARCH SCIENCES	_	121,822	119,739	138,165	141,555
(%)	0601104A	UNIVERSITY AND INDUSTRY RESEARCH CENTERS	1	46,243	44,927	45,576	52,966
	Basic Research	earch		181,722	179,059	198,854	210,349
4	0602104A	TRACTOR ROSE	7	2,484	3,065	0	0
\$	0602105A	MATERIALS TECHNOLOGY	7	9,858	14,530	9,811	10,979
9	0602120A	SENSORS AND ELECTRONIC SURVIVABILITY	2	26,675	19,351	19,294	19,682
7	0602122A	TRACTOR HIP	2	5,603	7,981	7,242	8,170
∞	0602211A	AVIATION TECHNOLOGY	7	17,853	21,898	27,282	30,281
6	0602270A	EW TECHNOLOGY	2	14,651	15,510	16,528	18,151
10	0602303A	MISSILE TECHNOLOGY	2	17,535	29,144	22,335	24,002
11	0602308A	MODELING & SIMULATION TECHNOLOGY	7	19,466	20,652	21,059	24,287
12	0602601A	COMBAT VEHICLE AND AUTOMOTIVE TECHNOLOGY	7	35,040	34,312	33,112	33,360
13	0602618A	BALLISTICS TECHNOLOGY	7	34,647	39,913	33,317	37,598
14	0602622A	CHEMICAL, SMOKE AND EQUIP DEFEATING TECHNOLOG	7	1,728	2,259	4,739	6,691
15	0602623A	JOINT SERVICE SMALL ARMS PROGRAM	7	4,857	4,497	4,786	5,204
16	0602324A	WEAPONS AND MUNITIONS TECHNOLOGY	7	24,297	22,246	26,980	30,613
17	0602705A	ELECTRONICS AND ELECTRONIC DEVICES	2	21,134	24,351	20,192	22,374
18	0602709A	NIGHT VISION TECHNOLOGY	7	16,442	16,636	17,304	19,213
19	0602712A	COUNTERMINE SYSTEMS DEVELOPMENT	7	0	7,372	10,598	10,715
20	0602716A	HUMAN FACTORS ENGINEERING TECHNOLOGY	7	15,445	15,968	14,256	15,626
21	0602720A	ENVIRONMENTAL QUALITY TECHNOLOGY	7	25,537	55,178	17,519	13,869
22	0602782A	COMMAND, CONTROL, COMMUNICATIONS TECHNOLOGY	2	13,130	14,976	16,838	18,180
23	0602783A	COMPUTER AND SOFTWARE TECHNOLOGY	7	3,843	6,500	619	337
24	0602784A	MILITARY ENGINEERING TECHNOLOGY	2	33,734	38,060	36,422	40,112
25	0602785A	MANPOWER/PERSONNEL/TRAINING TECHNOLOGY	2	7,254	9,329	9,014	9,019
26	0602786A	LOGISTICS TECHNOLOGY	7	26,995	21,319	17,689	18,565
27	0602787A	MEDICAL TECHNOLOGY	2	70,575	104,332	74,684	75,307
28	0602789A	ARMY ARTIFICIAL INTELLIGENCE TECHNOLOGY	7	2,054	2,179	1,255	1,330
	Applied Research	\csearch		450,837	551,558	462,935	493,665
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Exhibit R-1

Department of the Army FY 1998/1999 RDT&E Program

Appro	priation: 204	Appropriation: 2040 A Reserach Development Test & Eval Army	,			Date	Date: Feb 1997
Line	Program Element		Act —	FY 1996	FY 1997	Thousand FY 1998	Thousands of Dollars 1998 FY 1999
No	Number	Item					
29	0603001A	LOGISTICS ADVANCED TECHNOLOGY	3	38,820	22,724	35,469	32,197
30	0603002A	MEDICAL ADVANCED TECHNOLOGY	3	90,591	201,198	10,677	10,959
31	0603003A	AVIATION ADVANCED TECHNOLOGY	8	48,320	56,165	31,330	29,921
32	0603004A	WEAPONS AND MUNITIONS ADVANCED TECHNOLOGY	3	29,119	29,122	18,255	29,717
33	0603005A	COMBAT VEHICLE AND AUTOMATIVE ADVANCED TECH	ю	26,363	28,811	32,685	59,573
34	0603006A	COMMAND, CONTROL, COMM ADVANCED TECHNOLOGY	ю	29,323	29,379	19,688	20,911
35	0603007A	MANPOWER, PERSONNEL AND TRAINING ADV TECH	3	4,576	4,406	3,003	3,006
36	0603009A	TRACTOR HIKE	3	23,016	16,791	14,350	9,574
37	0603013A	TRACTOR DIRT	Э	1,713	3,265	3,393	2,448
38	0603017A	TRACTOR RED	3	5,369	8,445	5,572	4,953
39	0603020A	TRACTOR ROSE	3	4,731	4,971	9,204	9,111
40	0603105A	MILITARY HIV RESEARCH	3	2,795	17,544	2,713	3,162
41	0603238A	Global Surveillance/Air Defense/Precision Strike Technology Demo	3	37,630	22,009	11,664	4,926
42	0603270A	EW TECHNOLOGY	ю	3,818	6,651	8,182	11,754
43	0603313A	MISSILE AND ROCKET ADVANCED TECHNOLOGY	3	109,972	99,819	117,139	89,542
44	0603322A	TRACTOR CAGE	3	8,088	8,651	6,412	5,353
45	0603606A	LANDMINE WARFARE AND BARRIER ADV TECHNOLOGY	3	25,006	27,629	19,332	19,778
46	0603607A	JOINT SERVICE SMALL ARMS PROGRAM	ю	4,516	9,049	4,754	5,148
47	0603654A	LINE-OF-SIGHT TECHNOLOGY DEMO	3	13,396	9,791	13,000	20,000
48	0603710A	NIGHT VISION ADVANCED TECHNOLOGY	3	31,142	29,761	19,299	19,250
49	0603734A	MILITARY ENGINEERING ADVANCED TECHNOLOGY	33	14,544	20,213	12,231	17,334
50	0603772A	ADV TACTICAL COMPUTER SCIENCE & SENSOR TECH	33	27,185	21,282	19,970	23,079
	Advance	Advanced Technology Development		580,033	677,676	418,322	431,696
51	0603018A	TRACTOR TREAD	4	14,158	2,329	0	0
52	0603308A	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION	4	23,443	66,462	24,138	12,637
53	0603619A	LANDMINE WARFARE AND BARRIER - ADV DEV	4	35,768	27,860	18,882	11,214
54	0603627A	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-AD	4	2,623	6,246	0	0
55	0603639A	ARMAMENT ENHANCEMENT INITIATIVE	4	58,227	63,240	40,313	18,982
99	0603640A	ARTILLERY PROPELLANT DEVELOPMENT	4	20,811	8,322	8,521	0
57	0603645A	ARMORED SYSTEMS MODERNIZATION-ADVANCED DEVE	4	181,647	7,803	2,007	2,008
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Appro	priation: 204	Appropriation: 2040 A Reserach Development Test & Eval Army	ı			Date	Date: Feb 1997
Line	Program Element		Act	FY 1996	FY 1997	Thousand FY 1998	Thousands of Dollars 1998 FY 1999
No No	Number	Item					
58	0603649A	ENGINEER MOB EQUIP ADVANCED DEV	4	13,591	0	0	0
59	0603653A	ADVANCED TANK ARMAMENT SYSTEM	4	9,335	11,395	8,982	8,928
09	0603713A	ARMY DATA DISTRIBUTION SYTEM	4	6,360	23,170	21,214	10,049
61	0603745A	TACTICAL ELECTRONIC SUPPORT SYSTEMS - ADV DEV	4	5,630	3,941	0	0
62	0603747A	SOLDIER SUPPORT AND SURVIVABILITY	4	6,709	6,541	7,557	7,680
63	0603766A	TAC EXPLOIT OF NAT CAP (TENCAP)-DEM/VAL TIARA	4	26,796	25,354	20,920	23,714
64	0603774A	NIGHT VISION SYSTEMS ADVANCED DEVELOPMENT	4	3,167	2,769	2,939	2,893
65	0603790A	NATO RESEARCH AND DEVELOPMENT (H)	4	0	9,755	13,168	11,169
99	0603801A	AVIATION - ADV DEV	4	12,893	13,104	7,132	7,450
<i>L</i> 9	0603802A	WEAPONS AND MUNITIONS - ADV DEV	4	949	0	0	0
89	0603804A	LOGISTICS AND ENGINEER EQUIPMENT - ADV DEV	4	5,587	7,433	6,783	6,833
69	0603805A	CBT SERVICE SUPPORT CONTROL SYS EVAL & ANALYS	4	13,228	12,689	7,673	7,783
70	0603807A	MEDICAL SYSTEMS - ADV DEV	4	9,878	966'6	6,765	8,700
71	0603851A	TRACTOR CAGE (Dem/Val)	4	3,234	3,001	1,948	1,627
72	0603854A	ARTILLERY SYSTEMS DEMONSTRATION/VALIDATION	4	0	238,590	324,380	294,495
73	0603856A	SCAMP BLOCK II (SPACE)	4	0	8,250	73	699'6
74	0603889A	COUNTERDRUG R&D PROJECTS	4	420	01	01	01
	Demonst	Demonstration and Validation		454,454	558,250	523,395	445,831
75	0604201A	AIRCRAFT AVIONICS	5	20.073	14.694	21.669	12.729
9/	0604220A	ARMED, DEPLOYABLE OH-58D	5	989	1,130	0	0
77	0604223A	COMANCHE	5	284,131	331,424	282,009	371,927
78	0604270A	EW DEVELOPMENT	5	62,250	73,886	66,212	51,490
79	0604321A	ALL SOURCE ANALYSIS SYSTEM	5	49,912	39,308	24,045	26,228
80	0604325A	FOLLOW-ON TO TOW	5	944	5,479	13,949	50,884
81	0604328A	TRACTOR CAGE	5	0	1,524	11	303
82	0604604A	MEDIUM TACTICAL VEHICLES	5	2,923	5,874	3,729	0
83	0604609A	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-ED	ς.	1,915	0	0	703
84	0604611A	JAVELIN (AWWS-M)	S	2,249	6,014	8,018	5,277
85	0604619A	LANDMINE WARFARE	S	29,453	26,288	19,800	23,075
98	0604622A	FAMILY OF HEAVY TACTICAL VEHICLES	5	2,605	1,958	0	0
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Department of the Army FY 1998/1999 RDT&E Program

Approp	riation: 204	Appropriation: 2040 A Reserach Development Test & Eval Army				Date	Date: Feb 1997
	Program					Thousand	Thousands of Dollars
Line I	Element		Act _	FY 1996	FY 1997	FY 1998	FY 1999
No	Number	Item					
87	0604633A	AIR TRAFFIC CONTROL	5	5,073	7,377	1,705	1,729
88	0604640A	ADVANCED COMMAND AND CONTROL VEHICLE	5	17,306	7,734	8,867	0
) 68	0604641A	TACTICAL UNMANNED GROUND VEHICLE	5	0	2,823	2,687	2,663
06	0604642A	LIGHT TACTICLE WHEELED VEHICLE	5	3,970	2,937	606'6	39,919
91 (0604645A	ARMORED SYSTEMS MODERNIZATION (ASM)-ENG DEV	5	32,425	6,585	0	0
92 (0604649A	ENGINEER MOBILITY EQUIPMENT DEVELOPMENT	5	19,114	46,705	56,196	63,069
93 (0604710A	NIGHT VISION SYSTEMS - ENG DEV	5	37,658	34,870	33,456	21,255
94	0604713A	COMBAT FEEDING, CLOTHING, AND EQUIPMENT	5	16,049	76,428	55,964	43,539
95 (0604715A	NON-SYSTEM TRAINING DEVICES - ENG DEV	5	50,140	48,788	76,749	73,048
	0604716A	TERRAIN INFORMATION - ENG DEV	5	8,509	7,144	2,942	2,686
	0604726A	INTEGRATED METEOROLOGICAL SUPPORT SYSTEM	5	0	0	1,946	1,931
	0604739A	JTT/CIBS-M (TIARA)	5	0	4,765	4,499	4,447
) 66	0604740A	TACTICAL SURVEILLANCE SYSTEM - ENG DEV	5	2,954	0	0	0
100	0604741A	AIR DEFENSE C21 - ENG DEV	5	21,810	20,031	18,350	869'9
101	0604746A	AUTOMATIC TEST EQUIPMENT DEVELOPMENT	2	10,648	9,575	2,582	2,533
102	0604760A	DISTRIBUTIVE INTERACTIVE SIMULATIONS ENG DEV	2	0	15,631	20,895	9,242
103	0604766A	TAC EXPLOIT NAT CAP (TENCAP)-EMD (TIARA)	2	23,266	15,235	19,113	19,531
104	0604768A	BRILLIANT ANTI-ARMOR SUBMUNITION(BAT)	S	190,472	161,816	202,302	129,466
105 (0604770A	JOINT SURVEILLANCE/TARGET ATTACK RADAR SYSTEM	5	15,302	9,624	6,940	5,670
106	0604778A	POSITIONING SYS DEVEL (SPACE)	5	436	428	419	409
107	0604780A	COMBINED ARMS TACTICAL TRAINER (CATT)	5	56,282	26,110	2,823	2,866
108	0604801A	AVIATION - ENG DEV	5	4,885	5,403	5,109	6,067
109	0604802A	WEAPONS AND MUNITIONS - ENG DEV	5	14,845	23,661	3,577	24,865
110	0604804A	LOGISTICS & ENGINEER EQUIPMENT - ENG DEV	2	19,132	19,903	28,039	26,932
111	0604805A	COMMAND, CONTROL, COMMUNICATIONS SYSTEMS - ED	5	16,740	9,556	11,052	16,395
112 (0604807A	MEDICAL MATERIEL/MED BIO DEFENSE EQUIPMENT ED	ς	4,644	4,693	4,483	5,408
113 (0604808A	LANDMINE WARFARE/BARRIER - ENG DEV	5	6,802	7,556	22,605	44,133
114 (0604814A	SENSE AND DESTROY ARMOR - ENG DEV	5	15,764	9,934	22,372	20,813
115 (0604816A	LONGBOW	5	21,969	10,644	0	0
116	0604817A	COMBAT IDENTIFICATION	5	23,669	16,411	19,784	13,379
117 (0604818A	ARMY TACTICAL COMM & CONT HARDWARE & SOFTWAR	8	27,231	15,780	20,022	18,697
118	0604820A	RADAR DEVELOPMENT	2	200	0	0	0
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Ann	variation: 204	Announistion: 2040 A. Recerach Development Test & Eval Army	D			Dat	Date: Feb 1997
A DATE	Program	11 ANODERIC LOS CONTRACTOR CONTRA				Thousan	Thousands of Dollars
Line			Act	FY 1996	FY 1997	FY 1998	FY 1999
No	Number	Item					
119	0604823A	FIREFINDER	5	0	2,496	2,564	12,022
120		ARTILLERY SYSTEMS - ENGINEERING DEVELOPMENT	2	01	2,937	01	897
	Engineeri	Engineering and Manufacturing Development		1,124,738	1,141,159	1,107,393	1,162,925
121	0604256A	THREAT SIMULATOR DEVELOPMENT	9	13,705	11,383	14,004	11,877
122	0604258A	TARGET SYSTEMS DEVELOPMENT	9	13,557	9,916	11,688	13,063
123	0604759A	MAJOR TEST & EVALUATION INVESTMENT	9	62,154	40,833	40,449	33,407
124	0605103A	RAND ARROYO CENTER	9	17,895	21,108	17,576	18,040
125	0605301A	ARMY KWAJALEIN ATOLL	9	140,930	143,789	138,769	142,125
126	0605502A	SMALL BUS INV RSCH/SMALL BUS TECH PILOT PROG	9	85,919	0	0	0
127	0605601A	ARMY TEST RANGES AND FACILITIES	9	142,694	130,222	122,117	128,919
128	0605602A	ARMY TECHNOLOGY & SUSTAINING INSTRUMENTATION	9	25,422	21,944	33,184	32,976
129	0605604A	SURVIVABILITY/LETHALITY ANALYSIS	9	32,250	30,675	32,330	30,678
130	0605605A	DOD HIGH ENERGY LASER SYS TEST FAC (HELSTF)	9	33,231	29,974	14,952	14,976
131	0605606A	AIRCRAFT CERTIFICATION	9	2,821	2,840	2,919	2,924
132	0605702A	METEOROLOGICAL SUPPORT TO RDT&E ACTIVITIES	9	6,458	6,348	6,434	6,658
133	0605706A	MATERIEL SYSTEMS ANALYSIS	9	17,241	14,126	29,707	28,675
134	0605709A	EXPLOITATION OF FOREIGN ITEMS	9	8,413	7,193	7,762	4,349
135	_	SUPPORT OF OPERATIONAL TESTING	9	41,078	49,614	81,672	68,949
136	_	PROGRAMWIDE ACTIVITIES	9	64,859	59,708	86,208	85,604
137	0605802A	INTERNATIONAL COOPERATIVE RESEARCH AND DEV	9	1,555	1,534	1,581	1,581
138		TECHNICAL INFORMATION ACTIVITIES	9	13,549	16,552	15,451	15,872
139		MUNITIONS STANDARDZION EFFECTIVENESS & SAFETY	9	16,692	3,211	6,317	5,895
140	_	ENVIRONMENTAL CONSERVATION	9	2,493	1,723	1,778	2,977
141	_	POLLUTION PREVENTION	9	11,004	13,602	5,353	4,681
142	0605856A	ENVIRONMENTAL COMPLIANCE-RDT&E	9	65,985	54,251	51,378	47,604
143	0605876A	MINOR CONSTUCTION (RPM) - RDTE	9	6,035	4,229	4,393	4,537
144	_	MAINTENANCE AND REPAIR (RPM) - RDTE	9	86,907	68,580	85,119	74,681
145	_	REAL PROPERTY SERVICES (RPS)	9	0	90,457	88,945	88,936
146	0605896A	BASE OPERATIONS-RDT&E	9	306,481	219,946	231,653	233,633

Department of the Army FY 1998/1999 RDT&E Program

Exhibit R-1

Appro	priation: 204	Appropriation: 2040 A Reserach Development Test & Eval Army				Dai	Date: Feb 1997
	Program					Thousan	Thousands of Dollars
Line	Element		Act	FY 1996	FY 1997	FY 1998	FY 1999
No	Number	Item					
147	0605898A	MANAGEMENT HEADQUARTERS (RSCH & DEVELOPMENT)	9	15,007	18,407	4,837	4,765
148	A6666060	CLOSED ACCOUNT ADJUSTIMENT	9	322	0	0	0
	RDT&E	RDT&E Management Support		1,234,657	1,072,165	1,136,576	1,108,382
149	0603778A	MLRS PRODUCT IMPROVEMENT PROGRAM	7	68,851	62,804	26,678	21,845
150	0102419A	AEROSTAT JOINT PROGRAM	7	4,000	26,376	86,193	134,298
151	0203726A	ADV FIELD ARTILLERY TACTICAL DATA SYSTEM	7	36,973	38,512	39,039	34,939
152	0203735A	COMBAT VEHICLE IMPROVEMENT PROGRAMS	7	206,625	206,816	136,520	69,443
153	0203740A	MANEUVER CONTROL SYSTEM	7	48,302	27,888	25,641	23,932
154	0203744A	AIRCRAFT MODIFICATIONS/PRODUCT IMPROV PROGRAM	7	4,288	22,386	2,609	28,791
155	0203752A	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRA	7	3,703	3,834	2,940	2,933
156	0203758A	DIGITIZATION	7	110,583	137,078	156,960	149,015
157	0203801A	MISSILE/AIR DEFENSE PRODUCT IMPRV PROGRAM	7	59,199	64,557	17,412	11,431
158	0203802A	OTHER MISSILE PRODUCT IMPROVEMENT PROGRAMS	7	64,920	9,874	1,255	17,011
159	0203806A	TRACTOR RUT	7	3,346	3,112	2,111	0
160	0203808A	TRACTOR CARD	7	9,521	992'9	069'9	6,693
161	0208010A	JOINT TACTICAL COMMUNICATIONS PROG (TRI-TAC)	7	12,647	18,229	8,983	9,941
162	0208053A	JOINT TACTICAL GRD STATION (TIARA)	7	0	2,077	3,195	0
163	0301359A	SPECIAL ARMY PROGRAM	7	8,538	10,185	5,547	4,551
164	0303140A	COMMUNICATIONS SECURITY (COMSEC) EQUIPMENT	7	3,455	3,161	9,647	3,826
165	0303142A	SATCOM GROUND ENVIRO (SPACE)	7	52,821	39,421	57,827	44,288
166	0303150A	ARMY GLOBAL C2 SYS	7	0	19,389	15,045	14,793
167	0305114A	TRAFFIC CNTL/APPROACH/LANDING SYS (JPALS)	7	0	0	750	0
168	0305128A	SECURITY AND INTELLIGENCE ACTIVITIES	7	0	477	200	955
169	0708045A	End Item Industrial Preparedness Activities	7	23,699	47,819	44,326	50,086
170	1001018A	NATO JSTARS - TIARA	7	9,500	01	13,500	15,105
	Operation	Operational Systems Development		730,971	750,761	892,268	643,876
Total		Research Development Test & Eval Army		4,757,412	4,930,628	4,510,843	4,496,724



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FY97 COLUMN OF FY98/99 PRES BUD

Appropriated Value as the amount Congress appropriated less undistributed reductions in Sections 8136, 8138, and 8037 (column G of The spreadsheet below reflects the FY97 column of the FY98/99 President's Budget by project. It is provided as clarification to the attached descriptive summaries. In the Project Change Summary (paragraph B of Exhibit R-2), we have reflected the FY97 just recently realized that we should have shown the amount appropriated prior to any reductions (column A), and the total of those spreadsheet). This methodology is consistent with past practices and is consistent throughout this submission. However, we reductions (column F) as Adjustments to Appropriated Value. Unfortunately, time did not allow us to change over 400 descriptive summaries before the deadline for this submission. We intend to use this methodology for all future submissions.

ŗ	(A-F)	FY 97 Column	on RDDS	9896	3828	752	127	14393	1132	2233	2196	3530	2255	2411	2284	438	1738	5466	3284	1809	2751	6729	831	46812	1287	4798	343	585	8253	3749	5543	459	
Ŧ	(B+C+D+E)	Tot Adj to	Value	-207	-82	-16	ů.	-308	-24	-48	-47	-75	-48	-51	-49	6-	-37	-118	-70	-39	09-	-143	-18	-1032	-27	-103	-7	-13	-177	-81	-118	6-	
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C			Sec 8138	6-	4		0	-14	-1	-2	-5	<i>ڻ</i>	-5	-2	-5	0	-2	9-	ę.	-5	4	9-	-1	-45	-	ċ.	0	•	φ	4-	δ	0	X
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¥		FY 97	Value	9893	3910	292	130	14701	1156	2281	2243	3605	2303	2462	2333	447	1775	5584	3354	1848	2811	6872	849	47844	1314	4901	350	865	8430	3830	5661	468	
			Proj	91A	91C	91D	91E		305	31B	52C	53A	74A	74F	F20	F22	H42	H43	H44	H45	H47	H48	H52	H57	99H	H67	H68	S04	S13	S14	S15	S16	
			PE	61101	61101	61101	61101		61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	61102	
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m	Sec 8136	-16 -35 -31 -23 -63 -13	-137 -145 -145 -89 -116 -201 -58 -100 -918	-3659 -63	-297 -297 -53	-74 -269 -396	-163
∀	FY 97 Approp <u>Value</u>	800 1767 1532 1128 3136 650 122332	6853 690 7252 4469 5797 10043 2899 2899 4986 45888	3131 3131	14841 14841 2651	3686 13455 0 19792	8152 8152
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G (A-F)	FY 97 Column on RDDS	19213 2685 21898	8599 6911 15510	25228 3916 29144	9298 11354 20652	5854 2056 10318 3025 13059 34312	7839 7343 20328 4403 39913	2259 2259 4497 4497
F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-427 -58 -485	-184 -151 -335	-567 -84 -651	-218 -264 -482	-128 -44 -226 -65 -325 -788	-168 -157 -434 -94 -853	-84 -96 -96
ਲ	Consulting Services	-16 -16	0	72-	0	2, 2, 5, 4, 46	•	7 7 0
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Ċ	Sec 8138	-18 -3 -21	-8 -7 -15	-24 -4 -28	-9 -11 -20	-6 -10 -3 -13	-19 -19 -38	5 5 4 4 iivx
æ	Sec 8136	-393 -55 -448	-176 -141 -317	-516 -80 -596	-190 -232 -422	-120 -42 -211 -62 -268	-160 -150 -415 -90	-47 -47 -92 -92
¥	FY 97 Approp Value	19640 2743 22383	8783 7062 15845	25795 4000 29795	9516 11618 21134	5982 2100 10544 3090 13384 35100	8007 7500 20762 4497 40766	2343 2343 4593 4593
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F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-211	-106	-174	-491	-127	-394	-521	-358	-358	-28	-129	-157	-307	-47	-354	-127	-157	-105	-42	-113	-84	-275	99-	-155	-55	-1179	-152	-179	-331	
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æ	Sec 8136	-190	-101	-164	-455	-121	-376	-497	-340	-340	-27	-123	-150	-281	-45	-326	-121	-150	-100	-40	-108	-80	-263	-63	-148	-53	-1126	-145	-161	-306	
Ą	FY 97 Approp <u>Value</u>	9484	5039	8214	22737	6073	18799	24872	16994	16994	1359	6170	7529	14072	2250	16322	6072	7500	2000	2000	5400	4000	13170	3169	7412	2634	56357	7265	8042	15307	
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F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-90 -48 -138	-179 -140 -263 -90 -116 -50	-838 -65 -134 -199	-35 -69 -63 -219 -103	-10 -1044 -62 -239 -153 -182 -48 -21	-73 -73 -52 -523 -42 -209 -2658
뙤	037 Consulting <u>Services</u>	0		0 0	-8	-10 -1044 28 -62 2 -239 11 -153 7 -182 8 -182 8 -21	
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æ	Sec 8136	-86 -46 -132	-171 -134 -228 -86 -111	-778 -62 -128	-33 -66 -60 -189 -88 -436	-10 -597 -59 -228 -146 -174 -46	.400 -50 -50 -40 -200 -2540
¥	FY 97 Approp <u>Value</u>	4321 2317 6638	8556 6691 11403 4285 5541 2422	38898 3107 6421 9528	1665 3277 3000 9464 4402 21808	514 29843 2931 11415 7294 8693 . 2300 1000	2000 2500 2500 2500 2000 10000 126990
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F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-47	-12523	-26	-65	-40	, ₄	-341	-486	-2094	-194	-942	-50	-251	-10	-73	-63	-126	-126	-157	-168	-49	-4303	-74	-106	-625	-163	-314	-21	-10	-1313	
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¥	FY 97 Approp <u>Value</u>	2226 2226	584081	1249	3097	445 1891	251	16277	23210	100000	9228	45000	2400	12000	200	3500	3000	0009	0009	7500	8000	2373	205501	3527	5040	24647	7780	15000	1000	484	57478	
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គ	37 Consulting <u>Services</u>		0	-123	-123	c	0 0	0 0	0 0
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æ	Sec 8136	-115 -436	-44 -595	-95 -270 -84	-36 -40 -65 -590	-149 -240 -74 -100 -40	-28 -62 -90 -344 -344	-67 -67 -172 -172	-102 -102 -358 -358
⋖	FY 97 Approp Value	5772 21809	2178 29759	4758 13507 4203	1818 2000 3266 29552	7427 11981 3712 5000 2000 30120	1418 3082 4500 17176 17176	3335 3335 8625 8625	5078 5078 17919 17919
	Proj	232 43A	T62	221 440 441	497 502 C62	247 257 592 596 597	792 793 B18	C25 B69	B77 H29
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F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-449 -200 -649	-61 -82 -143	0 -188 -204 -283	-14 -193 -508 -828	-200 -200 -200 -562	-105 -667 -173 -21 -194	-209 -209 -46 -239 -116 -235 -636
a	37 Consulting Services	-124 -28 -152	0		-34	-34 -15 -15	0	0 0
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¥	FY 97 Approp <u>Value</u>	14446 8212 22658	2913 3881 6794	9000 9745 13515	639 7849 24245 37042	8851 8851 8851 23296	\$000 28296 8243 1000 9243	10000 10000 2224 11425 5566 11182 30397
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a O	77 Consulting <u>Services</u>	0	.38 .38	8 / 4	C & &	0 & &	0 0	0
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æ	Sec 8136	-29 -192 -192 -413	-280 -19 -143	-13867 -48 -48	-58 -900 -400 -1358 -569	-128 -128 -931 -363 -1294	-170 -170 -160	-233
¥	FY 97 Approp <u>Value</u>	1456 9585 9623 20664	13988 975 7136 22099	693292 2409 2409	2884 45000 20000 67884 28464 28464	6380 6380 46561 18160 64721	8500 8500 8000 8000	11639
	Proj	T08 T10 T12	101 243 281	. BA 3 B89	990 997 906	E79 643 656	B91 Q19	B99
	PE	63734 63734 63734	63772 63772 63772	TOTAL BA 3	63308 63308 63308	63627 63639 63639	63640	63653
	BA	еее	ппп	4	444 4	4 44	4 4	4

G (A-F)	FY 97 Column on RDDS	3538 19745 23283	3941 3941	1905 3347 1289 6541	25354 25354	2769 2769	9755 9755	2181 2010 8913 13104	1414 3868 129 213 86 851	872 7433	10884 1918 12802
F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-115 -424 -539	-84	-41 -71 -27 -139	-706 -706	09-	-208 -208	-47 -43 -191 -281	30 83 4 4 4 18	-19 -159	-235 -103 -338
E ()	937 Consulting Services	-39 -2 -41	0	0	-144 -144	0	0	. 0	·	0	0
Q	Sec 8037 FFRDC	0	0	0	-17	0	0	0		0	-3 -61 -64
၁	Sec 8138	-19 -22	44	9 7 7 9	-24 -24	ሱ ሱ	φ [,] φ	-2 -9 -13	140001		-10 -2 -12 xxiv
æ	Sec. 8136	-73 -403 -476	08-	-39 -68 -26 -133	-521 -521	-57 -57	-199	-45 -41 -182 -268	-29 -79 -3 -4 -2	-18 -152	-222 -40 -262
∢	FY 97 Approp Value	3653 20169 23822	4025 4025	1946 3418 1316 6680	26060 26060	2829 2829	9963	2228 2053 9104 13385	1444 3951 132 217 88 869	891 7592	11119 2021 13140
	Proj	2QT 370	535	610 669 C09	206	131	691	B32 B33 B45	266 428 G10 G11 G14 K39	K41	091 246
	PE	63713 63713	63745	63747 63747 63747	63766	63774	63790	63801 63801 63801	63804 63804 63804 63804 63804	63804	63805
	BA	4 4	4	4 4 4	4	4	4	4 4 4	4 4 4 4 4 4	4	4 4

Y98/99 PRES BUD		
FY97 COLUMN OF FY98/99 PRES BUD		
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G (A-F)	FY 97 Column on RDDS	3754 2581 2844 817 9996	3001 3001 235795 2795	7910 7910 7910	14694 14694 14694 1130	290190 41234 331424	4304.5 16065 3764 1261 9151	3648 35660 39308
F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-81 -55 -61 -18	-123 -123 -5121 -60	-170	-314 -314 -314 -24	-6338 -882 -7220	-534 -349 -81 -27 -197	-119 -773 -892
ഥ	037 Consulting Services	0	-10 -10 -77-	0 96	0 0	-130	- -	-40
Q	Sec 8037 FFRDC	0	48 48	0 0	c 0 0	0	φ φ	-10 -10
ပ	Sec 8138	4. 2. 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	-3 -226 -3	8- 8-	-14 -14 -1 -1	-278 -40 -318	-15 -16 -17	-4 -34 -38 xxv
æ	Sec 8136	-77 -53 -58 -17 -205	-62 -62 -4818	-4873 -162 -162	-11412 -300 -300 -23 -23	-5930 -842 -6772	-892 -328 -77 -26 -187	-75 -729 -804
₹ .	FY 97 Approp <u>Value</u>	3835 2636 2905 835 10211	3124 3124 240916 2855	8080	570679 15008 15008 1154 1154	296528 42116 338644	44579 16414 3845 1288 9348	3767 36433 40200
	Proj	808 811 836 837	C75 505 C68	389	BA 4 C97 538	327 C72	665 L12 L15 L16 L18	2FT B19
	PE	63807 63807 63807 63807	63851 63854 63854	63856	101AL BA 4 64201 C97 64220 538	64223	64270 64270 64270 64270 64270	64321 64321
	. BA	4 4 4 4	4 44	4	v v	S S S	w w w w	v v

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ARMY FY97 COLUMN OF FY98/99 PRES BUD

G (A-F)	FY 97 Column on RDDS	5479 5479	1524 1524	5874 5874	6014 6014	26288 26288	1958 1958	7377 7377	7734 7734	2823 2823	2937 2937	6585	34102 12603 46705
F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-117	-37	-126 -126	-129	-621	-42 -42	-172 -172	-165 -165	-61 -61	-63	-141	-735 -270 -1005
ਲ	Sec 8037 Consulting Services	0	<i>ሉ</i>	0		-17	0	-14	0		0	0	-5 -1 -6
a	Sec FFRDC	0	0	0	0	-41 -41	0	0	0	0	0	0	0
O .	Sec 8138	ጐ ቊ	77	φ φ	φφ	-25 -25	7 7	r- r-	r. r.	<i>.</i>	ů ů	99	-33 -12 -45 xxvi
æ	Sec 8136	-112 -112	-31 -31	-120	-123	-538 -538	-40 -40	-151 -151	-158 -158	-58 -58	09-	-135	-697 -257 -954
₹	FY 97 Approp <u>Value</u>	5596 5596	1561 1561	0009	6143 6143	26909	2000	7549 7549	7899	2884 2884	3000	6726 6726	34837 12873 47710
	Proj	E18	C71	Н07	466	880	629	286	G27	E47	E40	175	G25 G26
	34	64325	64328	64604	64611	64619	64622	64633	64640	64641	64642	64645	64649
	BA	Ś	8	2	5	S	1 0	S	S	Ś	5	S	ده ده



			¥	æ	ပ	Q	ដ	F (B+C+D+E)	G (A-F)
ΒA	PE	Proj	FY 97 Approp <u>Yaluc</u>	Sec 8136	Sec 8138	Sec 8037 FFRDC	037 Consulting Services	Tot Adj to Approp <u>Value</u>	FY 97 Column on RDDS
S S S	64710 64710 64710	L69 L70 L74	18443 9482 7712 35637	-369 -190 -154	-17 9 -7	φ φ	-13	-407 -199 -161 -767	18036 9283 7551 34870
10 10 10 10 10	64713 64713 64713 64713	548 667 668 C40 L40	809 48917 21598 1784 4955	-16 -978 -432 -36 -99	-1 -46 -20 -2	·	·	-17 -1024 -452 -38 -104	792 47893 21146 1746 4851
10 10 10	64715 64715 64715	241 396 573	78003 36752 2781 10332 49865	-1301 -735 -56 -207 -998	.3 .3 .10 .48	-31	0	-801 -801 -59 -217 -1077	35951 2722 10115 48788
10 10	64716	579	7369 7369 4867 4867	-147 -147 -97	<i>i. i.</i>	-50 -50 0	-21	-225 -225 -102 -102	7144 7144 4765 4765
10 10	64741	126 L59	20516 20516 9793 9793	-410 -410 -196 -196	61. 61. 6-	6- 6- 01- 01-	74 6. E. E.	-485 -485 -218 -218	20031 20031 9575 9575
10 10 10	64760 64760 64760	C73 C74 C77	10248 2632 3086 15966	-205 -53 -62 -320	.10 .2 .3	0	0	-215 -55 -65 -335	10033 2577 3021 15631
10	64766	606	15758 15758	-315 -315	-15 -15 xxvii	-136	-57 -57	-523	15235

G (A-F)	FY 97 Column on RDDS	5 67186 18819 75806 161816	9624 9624	428	26110 26110	5403 5403	13813 1566 5067 3215 23661	2183 1414 3193 9433 86	1641 1011 942 19903
F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	0 -1436 -402 -1753	-233	6, 6,	-603	-115 -115	-295 -34 -109 -69 -507	-47 -30 -68 -202 -2	-36 -22 -20 -427
덛	037 Consulting Services	-129	-15 -15	0	0	0			0
Q	Sec 8037 FFRDC	0	-12	0	-44 -44	0	O		0
U	Sec 8138	0 -64 -18 -73	6, 6,	00	-25 -25	<i>ት</i> ት	-13 -2 -3 -3 -23	4 <u>-</u> 4 4 0	-2 -1 -1 -19
æ	Sec 8136	0 -1372 -384 -1551 -3307	-197	φ. φ.	-534 -534	-110	-282 -32 -104 -66 -484	-45 -29 -65 -193	-34 -21 -19 -408
₹	FY 97 Approp Value	\$ 68622 19221 77559 165407	9857 9857	437	26713 26713	5518 5518	14108 1600 5176 3284 24168	2230 1444 3261 9635 88	1677 1033 962 20330
	Proj	2NT 641 687 688	202	168	571	C45	284 AS1 531 712	194 279 429 H01	L39 L41 L42
	PE	64768 64768 64768 64768	64770	64778	64780	64801	64802 64802 64802 64802	64804 64804 64804 64804 64804	64804 64804 64804
	BA	5 5 5 5	\$	8	8	8	8 8 8 8 8	~ ~ ~ ~ ~ ~ ~ ~ ~	, w w w



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G (A-F)	FY 97 Column on RDDS	1660 542 6883	471 9556	189 1659 865 1980 4693	5384 2172 7556	300 9634 9934	5749 4895 10644	13575 2836 16411	7621 8159 15780	2496 2496
F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-55 -27 -148	-10	-4 -36 -19 -42	-115 -60 -175	-9 -206 -215	-123 -105 -228	-311 -61 -372	-163 -486 -649	-55 -55
ы	8037 Consulting <u>Services</u>		0	0	φ φ	ሱ ሱ	0	-20	-15	7 7
Q	Sec 8037 FFRDC	-19 -15	-34	0	<i>ሉ</i> ሉ	0	0	0	-290	0
၁	Sec 8138	Ġ∴ċ	0-10	0 4 1 4 6	ν, c, <i>c</i> ,	0 6 6		-13 -3 -16	-7 -8 -15	-2 -2 xxix
æ	Sec 8136	-34 -11 -141	-10 -196	-4 -34 -40 -96	-110 -45 -155	-6 -197 -203	-117 -100 -217	-278 -58 -336	-156 -173 -329	-51 -51
4	FY 97 Approp <u>Value</u>	1715 569 7031	481 9796	193 1695 884 2022 4794	5499 2232 7731	309 9840 10149	5872 5000 10872	13886 2897 16783	7784 8645 16429	2551 2551
· :	Proj	097 098 282	485	812 832 834 849	016 415	2ST 644	C87 C31	482 901	323 C34	L85
	PE	64805 64805 64805	64805	64807 64807 64807 64807	64808	64814 64814	64816	64817	64818 64818	64823
	BA	SOS	\$	w w w w	v, v,	หห่	v v	ν, ν,	v v	8

G (A-F)	FY 97 Column on RDDS	2937 2937	1141159	11383 11383	6564 3352 9916	2373 31504 6956 40833	21108 21108	143789 143789	00000	12557 4685 1545 17054 34436 59945 130222
F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-63 -63	-25667	-244 -244	-142 -71 -213	-50 -693 -149 -892	-655 -655	-3075 -3075	000000	-269 -100 -33 -364 -736 -1288
函	Sec 8037 Consulting Services	0	-546	0	0	0	0	0	0	0
Ω .	Sec {	0	989-	0	ç. ç.	-19	-200	0	0	ሉ ሉ
ပ	Sec 8138	ώώ	-1097	-11	ራ එ එ	-2 -30 -7 -39	-20	-138 -138	000000	-12 -16 -16 -33 -33 -124 xxx
æ	Sec 8136	09-	-23338	-233 -233	-134 -68 -202	-48 -644 -142 -834	-435 -435	-2937 -2937	00,0000	-257 -96 -32 -348 -703 -1225
∀	FY 97 Approp Value	3000	1166826	11627 11627	6706 3423 10129	2423 32197 7105 41725	21763 21763	146864 146864	0	12826 4785 1578 17418 35172 61233 133012
	Proj	209	. BA 5	926	238	983 984 986	732	614	770 771 802 860 861 M40	618 630 632 E90 E91 E93
	I	64854	TOTAL BA 5	64256	64258 64258	64759 64759 64759	65103	65301	65502 65502 65502 65502 65502 65502	65601 65601 65601 65601 65601 65601
	BA	w.		9	9	999	9	9	99999	00000

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G (A-F)	FY 97 Column on RDDS	21944 21944	4776 5687 3660 4921	5225 5609 797 30675	29974 29974	2840 2840	6348 6348	4169 9957 14126	3235 3958 7193	20355 10324 4304 14631 49614
F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-469 -469	-103 -131 -79 -106	-112 -120 -17 -668	-693	-65 -65	-136 -136	-89 -213 -302	-69 -85 -154	-666 -221 -92 -313
я	37 Consulting <u>Services</u>	0		0	0	4 4	0	0	0	-224
٠ •	Sec 8037 FFRDC	0	-10	-10	-51 -51	0	0	0	0	? ? _.
Ü	Sec 8138	-21 -21	νν 4 νν 4	-5 -1 -30	-29		φφ	-4 -10 -14	£ 4. r.	-20 -10 -4 -14 -48
æ	Sec 8136	-448 -448	-98 -116 -75 -101	-107 -115 -16 -628	-613 -613	-58 -58	-130 -130	-85 -203 -288	-66 -81 -147	-420 -211 -88 -299 -1018
¥	FY 97 Approp <u>Value</u>	22413 22413	4879 5818 3739 5027	5337 5729 814 31343	30667	2905 2905	6484 6484	4258 10170 14428	3304 4043 7347	21021 10545 4396 14944 50906
	Proj	628	670 671 672 675	678 678 679	E97	092	128	026 541	650 C28	001 985 987 V02
	PE	65602	65604 65604 65604 65604	65604 65604 65604	65605	90959	65702	65706 65706	65709 65709	65712 65712 65712 65712
	BA	9	9999	999	. 9	9	9	9 9	99.	9999

G (A-F)	FY 97 Column on RDDS	7201	3700	3960	5523	4897	5844	5368	2213	2577	12203	3112	382	2728	59708	1534	1534	2562	2805	2261	3376	2134	2739	675	16552	199	576	274	1694	3211	1467	113	143	1723	
F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-154	-80	-85	-118	-105	-125	-119	7.4-	-55	795-	-67	∞-	-59	-1384	-32	-32	-64	-65	-48	-72	-46	-59	-15	-369	-15	-13	9	-37	-71	-31	-5	က္	-36	
떨	Sec 8037 Consulting Services						•	7		;	-14				-15		0	6-	-5						-14					0				0	
Q	Sec						,	ů.		(-85				-88 -		0								0					0				0	
ပ	Sec 8138	<i>L</i> -	4-	4	ጭ '	ψ,	စု (φ	7-	7 ;	71-		0	ů.	-58	7	-	7	£-	?	ę.	-2	£-	-1	-16	-	-	0	-2	4-	7	0	0	7	xxxii
æ	Sec 8136	-147	92-	-81	-113	-100	-119	-110	-45 C -	-53	157-	-64	φ	-56	-1223	-31	-31	-53	-57	-46	69-	-44	-56	-14	-339	-14	-12	Ģ	-35	-67	-30	-5	ů.	-35	
∢	FY 97 Approp Value	7355	3780	4045	5641	5002	5969	5487	0977	2632	12565	3179	390	2787	61092	1566	1566	2626	2870	2309	3448	2180	2798	069	16921	682	289	280	1731	3282	1498	115	146	1759	
	Proj	M02	M15	M16	M42	M43	M44	M45	M46	M47	M53	CCM.	M58	M75		798		720	727	729	730	733	C16	C18		296	857	F21	F24		000	221	scc		
	PE	65801	65801	65801	65801	65801	65801	65801	10869	65801	10800	65801	65801	65801		65802		65803	65803	65803	65803	65803	65803	65803		65805	65805	65805	65805		65853	65853	65853		
	BA	9	9 ,	9 ,	9 1	9、	۰۰	9 V	۰ م	۰ و	۰ م	۰ د	9	9		9		9	9	9	9	9	9	9		9	9	9	9		9	9	9		



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ڻ ئ	(A-F)	FY 97	Column	on RDDS	534	140	1916	782	10230	13602	34126	13680	1469	4976	54251	2708	1040	481	4229	49797	15476	3307	68580	61601	24338	4518	90457	145038	62727	12181	219946	4700	13707	18407	1072165
F	(B+C+D+E)	Tot Adj to	Approp	Value	-12	ç.	-41	-17	-219	-292	-730	-292	-31	-107	-1160	-58	-22	-10	06-	-1065	-331	-71	-1467	-1317	-520	96-	-1933	-3101	-1341	-261	-4703	-101	-293	-394	-23579
A			Consulting	Services						0					0				0				0				0				0			0	-257
D		Sec 8037		FFRDC						0					0				0				0				0				0			0	-377
၁			,	Sec 8138	-	0	7	-	-10	-14	-33	-13	-	ۍ	-52	က္	7	0	4	-48	-15	ώ	99-	-59	-23	. 4-	98-	-138	09-	-12	-210	<u>.</u>	-13	-18	-1029 xxxiii
В			,	Sec 8136	-11	ů	-39	-16	-209	-278	-697	-279	-30	-102	-1108	-55	-21	-10	98-	-1017	-316	89-	-1401	-1258	-497	-92	-1847	-2963	-1281	-249	-4493	96-	-280	-376	-21916
¥		FY 97	Approp	Value	546	143	1957	199	10449	13894	34856	13972	1500	5083	55411	2766	1062	491	4319	50862	15807	3378	70047	62918	24858	4614	92390	148139	64068	12442	224649	4801	14000	18801	1095744
			,	Proj	0PP	1PP	SPP	7PP	8PP		000	IVV	4VV	5VV		MM0	1WW	4WW		0YY	17.7	4YY		DDO	100	400		ZZ0	1ZZ	4ZZ		M65	831		BA 6
				TE	65854	65854	65854	65854	65854		65856	65856	65856	65856		65876	65876	65876		65878	65878	65878		62879	62829	62879		96889	96859	96859		86889	65898		TOTAL BA 6
				BA	9	9	9	9	9		9	9	9	9		9	9	9		9	9	9		9	9	9		9	9	9		9	9		

G (A-F)	FY 97 Column on RDDS	26422 25773 10681 62876	26376 26376	4777 33735 38512	3051 2013 1415	69749 17915 87753 11651 13269 206816	3772 24116 27888	17539 245 4602 22386	3834 3834	88125 48953 137078
F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-616 -551 -228 -1395	-564	-156 -829 -985	-65 -66 -45	-1497 -383 -1882 -249 -293	-123 -1071 -1194	-375 -5 -98 -478	-113 -113	-2055 -1047 -3102
B (1	37 Consulting <u>Services</u>	-50	0	-52 -64 -116	-22	. s	-41 -52 -93	0	-30	-55
a	Sec 8037 FFRDC	0	0	-42 -42		0	-491 -491	0	0	-112
O	Sec. 8138	-25 -25 -10	-25 -25	-5 -32 -37	- 77	-67 -17 -84 -11 -13	-4 -24 -28	-17 0 -4 -21	4 4	-85 -47 -132 xxxiv
æ	Sec 8136	-541 -526 -218 -1285	-539 -539	-99 -691 -790	-62 -29	-1425 -366 -1793 -238 -271	-78 -504 -582	-358 -5 -94 -457	-79 -79	-1803 -1000 -2803
¥	FY 97 Approp <u>Value</u>	27038 26324 10909 64271	26940 26940	4933 34564 39497	3116 2079 1460	71246 18298 89635 11900 13562	3895 25187 29082	17914 250 4700 22864	3947 3947	90180 50000 140180
	Proj	027 050 054	E55	2ET 322	280 2TT 2UT	330 344 371 718 C64	2HT 484	430 504 179	106	374 376
	PE	63778 63778 63778	12419	23726 23726	23735 23735 23735	23735 23735 23735 23735 23735	23740 23740	23744 23744 23744	23752	23758 23758
	BA	r r r	7	7	r r r		7	r r r	7	7 7



G (A-F)	FY 97 Column on RDDS	46280 18277 64557	378 4376 3818 1302 9874	3112 3112	6766 18229 18229	2077 2077 8853 386 . 1712 10951	2515 574 3089	16255 137 16158 1007 859 4239 38655
F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-1011 -391 -1402	-12 -93 -82 -38 -225	-67 -67	-167 -167 -464 -464	-47 -47 -189 -8 -37	-59 -13 -72	-808 -5 -1059 -22 -19 -109
띮	037 Consulting Services	-21	-10 -14	0 0	-21 -21 -17	င်း င်း	0	-2 -222 -18 -242
Q	Sec 8037 FFRDC	0	0	0	.55 -55	0 0	9 9	-451 -477
ပ	Sec 8138	-44 -18 -62	0 4 4 1 6			.2 .2 .8 .8 .0 .10	÷ - ÷	-16 0 -16 -1 -1 -1 -3 xxxv
8	Sec. 8136	-946 -373 -1319	-8 -89 -78 -27	-64 -64	-139 -139 -374	-42 -42 -181 -8 -35	-51 -12 -63	-341 -344 -21 -18 -87
∢	FY 97 Approp	47291 18668 65959	390 4469 3900 1340 10099	3179	6933 6933 18693 18693	2124 2124 9042 394 1749	2574 587 3161	17063 142 17217 1029 878 4348 40677
	Proj	036 303	2MT 304 045	C19	107	635 381 382 H87	491 501	253 2PT 384 386 455 456
	<u>aa</u>	23801 23801	23802 23802 23802 23802	23806	28010	28053 31359 31359 31359	33140 33140	33142 33142 33142 33142 33142 33142
	BA	7.	r r r	7 1		r	7	r r r r r r

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G (A-F)	FY 97 Column on RDDS	19389 19389	477	47819	750761	4930628
F (B+C+D+E)	Tot Adj to Approp <u>Value</u>	-415 -415	-10	-1023	-18459	-112135
ы	Sec 8037 Consulting Consulting	0	0	0	-718	-2403
Q	Sec. FFRDC	0	0	0	-1634	-3718
U	Sec 8138	-19	00	-46 -46	-722	-4757
æ	Sec. 8136	-396 -396	-10	-977 -977	-15385	-101257
∢	FY 97 Approp <u>Value</u>	19804 19804	487	48842 48842	769220	5062763
	Proj	086 C86	H12	E25	. BA 7	
	<u>PE</u>	33150	35128	78045	TOTAL BA 7	
	BA	7	7	7		



BA #1 - B∕	BA PE #1 - BASIC RESEARCH	Program Element Title	PAGE
7 7 7	0601101A 0601102A 0601104A	In-House Laboratory Independent Research Defense Research Sciences	1 10 76
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9	0602211A	Aviation Technology	115
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35	0603238A	Air Defense/Precision Strike Technology	388
36	0603270A	Electronic Warfare (EW) Technology	394
37	0603313A	Missile and Rocket Advanced Technology	399
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39	0603607A	Joint Service Small Arms Program	433
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41	0603710A	Night Vision Advanced Technology	440
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45	0603619A	Landmine Warfare and Barrier - Advanced Development	473
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103	0604816A	Longbow	1041
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105	0604818A	Army Tactical Command and Control Hardware & Software	1062
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109	0604256A	Threat Simulator Development	1086
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112	0605103A	Rand Arroyo Center	1104
113	0605301A 0605601A	Army Kwajalein Atoll Army Test Ranges and Facilities	1108

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140	0203752A	Aircraft Engine Component Improvement Program	1357
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Army Artificial Intelligence Technology	. 0602789A	294
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Army Industrial Preparedness Manufacturing Technology	0708045A	1486
Army Kwajalein Atoll	0605301A	1108
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Army Tactical Command and Control Hardware & Software	0604818A	1062
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Maneuver Control System	0203740A	1332
Manpower, Personnel and Training Advanced Technology	0603007A	381
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Missile Technology	0602303A	131
Missile/Air Defense Product Improvement Program	0203801A	1372
Modeling and Simulation Technology	0602308A	137
Multiple Launch Rocket System Product Improvement Program	0603778A	1467
Munitions Standardization Effectiveness and Safety	0605805A	1220
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Smoke, Obscurant and Target Defeating System - Engineering Development	0604609A	711
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Survivability/Lethality Analysis	0605604A	1138
Tactical Electronic Support Systems - Advanced Development (TIARA)	0603745A	524
Tactical Exploitation of National Capabilities (TENCAP) - Dem/Val (TIARA)	0603766A	544
Tactical Exploitation of National Capabilities (TENCAP) - Engineering & Manufacturing Development	0604766A	876
(TIARA)	06047404	¢47
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Tactical Unmanned Ground Vehicle	06047584	1080
Target Systems Development	0605803	1203
Technical Intormation Activities	0607164	830
Terrain Information - Engineering Development (TIARA)	0604256A	1086
Tinear Simulator Development Thiversity and Industry Research Centers	0601104A	9/
Weapons and Munitions - Advanced Development	0603802A	580

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (R	(-2 Exhi	bit)		DATE FeI	February 1997	197
8UDG 4 - [BUDGET ACTIVITY 4 - Demonstration and Validation	:		PE NI 06 0 Inte	PE NUMBER AND TITLE 0603308A Arm) Integration	ппсе Army Mis	sile Defe	PE NUMBER AND TITLE 0603308A Army Missile Defense Systems Integration	ems		
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	23443	66462	24138	12637	12623	12599	15637	15855	Continuing	Continuing
D989	D989 Nautilus/THEL	0	44058	16457	0	0	0	0	0	0	60515
D990	D990 Theater Missile Defense (TMD) System Integration	23443	2823	2685	2663	2656	2642	2811	2822	Continuing	Continuing
266Q	Battle Integration Center	0	19581	4996	9974	2966	9957	12826	13033	Continuing	Continuing

low-cost, high fidelity representation of the modern battlefield. In addition, this program element funds the completion of the joint U.S./Israeli Tactical High Energy Laser advanced concepts and requirements; research, development and acquisition by integrating its simulation environment with other simulations and live entities to achieve a pillars of Theater Missile Defense (TMD): active defense, passive defense, attack operations, and battle management/command, control, communications, computers, and pillar and intra-pillar products, required to accomplish the integrated TMD mission, exceed the scope of other programs. This program element also funds the U.S. Army intelligence functions. This integration program produces hardware and software solutions, doctrinal and procedural solutions, interfaces, and architectures; these inter-Space and Strategic Defense Command's Missile Defense Battle Integration Center (MDBIC) which is building a flexible, linked architecture of pre-existing live, virtual Mission Description and Budget Item Justification: This program element funds systems analysis, studies, and experimentation designed to validate and integrate the (THEL) Advanced Concept Technology Demonstration (ACTD). Work in this program element is dedicated to advanced technology development used to demonstrate and constructive simulations. This distributed interactive simulation (DIS)-based architecture can operate in the regimes of training, exercises and military operations; general military utility to include demonstration and validation in the area of TMD and is appropriately funded in Budget Activity 4.

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Exhibit R-2 (PE 0603308A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SE	HEET (R	-2 Exhil	bit)		PAIE Fet	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060 Inte	PE NUMBER AND TITLE 0603308A Army Missile Defense Systems Integration	ritle Army Miss	sile Defe	nse Syst	ems]	РРОЈЕСТ D989
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D989 Nautilus/THEL	0	44058	16457	0	0	0	0	0	0	60515

effectiveness of high energy lasers (HELs) to defeat the threat posed by Katyusha and similar short range artillery rockets. The THEL ACTD is an integration effort that Technology Demonstration (ACTD). The THEL ACTD is a joint U.S./Israel program to design, fabricate, and test a tactical-sized THEL demonstrator to evaluate the A. Mission Description and Justification: Project D989-Nautilus/THEL: These funds will complete the Tactical High Energy Laser (THEL) Advanced Concept supports the active defense pillar of Theater Missile Defense. Acquisition Strategy: The THEL ACTD has been assigned an urgent priority by the Secretary of Defense. A sole source letter contract was executed with TRW to deliver the THEL demonstrator by 31 March 1998. The letter contract was definitized about 19 January 1997.

FY 1996 Accomplishments: FY 1996 funds for this effort provided in PE 0605605A.

FY 1997 Planned Program:

- THEL ACTD design and fabrication.
- System engineering, analysis and subsystem integration activities. 1500
 - Program management. 2400
- Government furnished property. 1100
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 1077
 - 44058 Total

FY 1998 Planned Program:

- Completion of the THEL demonstrator integration and testing at TRW. 12400
- System engineering, analysis and system integration activities. 2000
 - Program management. 2057

6457

FY 1999 Planned Program: Project not funded in FY 1999

Project D989

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Exhibit R-2 (PE 0603308A)







RDT&E BUDGET ITEM JUST	TIFICATION	TIFICATION SHEET (R-2 Exhibit)	R-2 Exhik	oit)	DATE Fe	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603308A Arm) Integration	OTITLE Army Miss	PE NUMBER AND TITLE 0603308A Army Missile Defense Systems Integration	ystems	.	РRОЈЕСТ D989
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996	EY 1997 0 44058	FY 1998 0	FY 1999 0			
Change Summary Explanation: Funding - FY 1997 (+44058) Congressional increase to support the THEL Demonstrator FY 1998 funding reprogrammed (+16457) to complete the integration and testing of the THEL demonstrator.	ngressional inc ogrammed (+16	rease to support th 5457) to complete t	THEL Demor	strator nd testing of the T	HEL demonstrat	or.	
C. Other Program Funding Summary FY 1996 Nautilus PE 0605605A 4747 THEL PE 0605605A 4747 Nautilus - Israel 1700 THEL - Israel 200000	FY 1997 F	FY 1998 FY 1999	9 FY 2000	FY 2001 FY 2002	002 FY 2003	To Compl	Total Cost 7247 4747 1700 29500
D. Schedule Profile 1 2 3 Initiate THEL ACTD Initiate Long Leads & Fabrication Complete Fabrication/Integration Complete TRW THEL ACTD Testing	4 ×	FY 1997 1 2 3 X	4	FY 1998 2 3 X X	1	FY 1999 2 3	4
Project D989	$P_{ m c}$	Page 3 of 10 Pages		ш	Exhibit R-2 (PE 0603308A)	0603308A)	
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT C	OST BF	EAKDC	WN (R-:	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603308A Army Integration	AND TITLE A Army I On	Missile De	PE NUMBER AND TITLE 0603308A Army Missile Defense Systems Integration		<u>a</u> 0	PROJECT D989
A. Project Cost Breakdown THEL Demonstrator Program Management SBIR/STTR Total	FY 1996	EX 1997 40581 2400 1077 44058	<u>(1997</u> 40581 2400 1077 44058	EY 1998 14400 2057 16457	FY 1999			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contract Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
TRW Letter/Sole 4th Qtr 96 89000	89000			37981	12400			50381
various various TBD				2600	2000			4600
<u>4</u>	TBD			2400	2057			4457
Support Contracts CFFF SBIR/STTR Test and Evaluation Organizations				1077				1077
Government Furnished Property: Not applicable								
Subtotal Product Development Subtotal Support and Management				40581 3477	14400 2057			54981 5534
Subtotal Test and Evaluation Total Project				44058	16457			60515
Project D989	Page	Page 4 of 10 Pages	S		Exh	Exhibit R-3 (PE 0603308A)	0603308A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fe!	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060 Inte	PE NUMBER AND TITLE 0603308A Army Missile Defense Systems Integration	ritle rmy Mis :	sile Defe	nse Syst	ems	. .	РRОЈЕСТ D990
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D990 Theater Missile Defense (TMD) System Integration	23443	2823	2685	2663	2656	2642	2811	2822	Continuing	Continuing
A. Mission Description and Justification: Project D990-TMD System Integration: Funds initiatives directed by U.S. Army Space and Strategic Defense Command (USASSDC) in its capacity as the U.S. Army advocate, integrator, and focal point for TMD operations. USASSDC is empowered by the Department of the Army to serve as the Department level, operational representative for theater missile defense. This program conducts systems analysis, studies, and experimentation designed to validate and integrate the pillars of TMD: active defense, passive defense, attack operations, and battle management/command, control, communications, computers, and intelligence functions. This integration program produces hardware and software solutions, doctrinal and procedural solutions, interfaces, and architectures; these inter-pillar and intrapillar products, required to accomplish the integrated TMD mission, exceed the scope of other programs. This program supports the milestone decisions for active defense missile and C41 systems, as well as Aviation and Artillery.	cate, integrate for theater m assive defense ware and soft ed TMD miss rtillery.	D System Ir. and focal issile defens, attack operware solution, exceed i	ntegration: point for TM e. This prog rations, and I ns, doctrinal	Funds initiat AD operation gram conduct battle manag and procedt other progra	ives directects. Is. USASSI Is systems an ement/comn ural solutions ms. This pre	l by U.S. Arrackies empowalysis, studinand, controliand, interfaces, interfaces, ogram suppo	my Space ar vered by the es, and expe l, communic and architer orts the miles	id Strategic I Department rimentation ations, comp stures; these stone decisio	Defense Cor of the Army designed to uuters, and ii inter-pillar ns for active	mand to serve validate itelligence and intra- defense
Acquisition Strategy: Program is continuous. Planned accompli	nned accompl	ishments wi	ill be conduc	ishments will be conducted by various performers.	us performer	ș;				
 FY 1996 Accomplishments: 3532 Conducted systems analysis, studies, and experimentation designed to validate and integrate the pillars of TMD. 19911 Missile Defense Battle Integration Center funding; Provides upgraded to the Synthetic Theater of War (STOW) combat environment; Completed the development of the Distributed Interactive Simulation (DIS) interface; Provided the STOW environment in all tactical operations centers. 	studies, and e ration Center Synthetic The nt of the Distr	experimentat funding; ater of War (ibuted Inter tactical oper	xperimentation designed tunding; ter of War (STOW) combibuted Interactive Simulatiactical operations centers.	I to validate abat environ ation (DIS) i	and integratt ment; interface;	the pillars o	of TMD.			

FY 1997 Planned Program:

23443

Total

Conduct testing and exercising prototypical hardware and software related to integrated TMD operations, enhancements to models and simulations, systems analysis and studies regarding TMD issues.

Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Programs. 2754

69 2823

Total

Project D990

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Exhibit R-2 (PE 0603308A)

RDT&E BUDGET ITEM JUSTIFICATION	IFICATION SHEET (R-2 Exhibit)	R-2 Exhibi		DATE February 1997	
вирсет астіуіту 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603308A Army Integration	отпс Army Missi	PE NUMBER AND TITLE 0603308A Army Missile Defense Systems Integration	PROJECT	лест)0
 FY 1998 Planned Program: 2685 Continue to conduct testing and exercising prototypical hardware and software related to integrated TMD operations, enhancements to models and simulations, systems analysis and studies regarding TMD issues. Total 2685 	ardware and softwa issues.	re related to inte	grated TMD operations	, enhancements to models a	and
 FY 1999 Planned Program: 2663 Continue to conduct testing and exercising prototypical hardware and software related to integrated TMD operations, enhancements to models and simulations, systems analysis and studies regarding TMD issues. Total 2663 Zotems	ardware and softwa issues.	re related to inte	grated TMD operations	i, enhancements to models a	and
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1997 2884 2823	FY 1998 2886	FY 1999 2877		
Adjustments to Appropriated Value -542 FY 1998 Pres Bud Request 23443	2823	2685	2663		
C. Other Program Funding Summary: There are no other related RDTE appropriation efforts.	ropriation efforts.				
D. Schedule Profile: Due to the continuous nature of these efforts, milestones or events cannot be provided.	or events cannot be	provided.			

Project D990

Page 6 of 10 Pages

Exhibit R-2 (PE 0603308A)





RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT COS	T BREAKD	OWN (R-3)		DATE February 1997	1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NU 060:	PE NUMBER AND TITLE 0603308A Army Integration	PE NUMBER AND TITLE 0603308A Army Missile Defense Systems Integration	ense Syste		PROJECT D990
A. Project Cost Breakdown Program Management Support SBIR/STTR Total	FY 1996 23443 23443	EX 1997 2754 69 2823	FY 1998 2685 2685	FY 1999 2663 2663	- -	
B. Budget Acquisition History and Planning Information: Not applicable.	cable.					
Project D990	Page 7 of 10 Pages) Pases		T Xhibit	Exhibit R-3 (PF 0603308A)	
	469					Item 44

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (R	-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060 Inte	PE NUMBER AND TITLE 0603308A Army Integration	nnle Vrmy Mis	sile Defe	E NUMBER AND TITLE 0603308A Army Missile Defense Systems Integration	ems	.	РRОЈЕСТ D997
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D997 Battle Integration Center	0	19581	4996	9974	9967	9957	12826	13033	Continuing	13033 Continuing Continuing

exercises, demonstrations, and experiments. In the future, this program will ensure that deploying soldiers will be virtually rehearsed against the force we are facing prior to distributed, netted computing resources, models, and simulation efforts for warfighter exercise, analytical, and virtual prototyping activities. Provide the warfighter during MDBIC supports the Army and Department of Defense in Cost and Operational Effectiveness Analyses and requirements analyses through the development and operation terrain, threat, and advanced weapons integration. These funds will allow further development of the Synthetic Battlefield Environment (SBE) and SBE establishment at exercises and deployments with a distributed synthetic battlefield training and planning environment, and with near real-time after action review (AAR) capability. The Requirements Analysis and Research, Development and Acquisition simulation capabilities support the critical mission areas of Theater Missile Defense, Cruise Missile of an analytical modern battlefield. Enhance materiel development through virtual prototyping and user interface development. The MDBIC's Advanced Concept and implementing a synthetic Army battlefield context for integrating missile defense and space assets; supporting requiring activities, materiel developers, and users with constructive, virtual and live simulation exercises; model Service and Allies' weapons in realistic scenarios; and develop databases and modeling for weather, tactics, Defense, National Missile Defense, and Space Operations. The MDBIC's modeling and simulation capabilities interface with other DIS-compatible tools to conduct A. Mission Description and Justification: Project D997-Battle Integration Center: The Missile Defense Battle Integration Center (MDBIC) is developing and heir deployment. In essence, the American soldier will be a "Virtual Combat Veteran" before he is deployed.

Acquisition Strategy: Program is continuous. Planned accomplishments will be conducted by various performers.

FY 1996 Accomplishments: Project not funded in FY 1996

FY 1997 Planned Program:

- Participate in/support Army and joint exercises and warfighting experiments.
- Continue the development of the SBE, including required interfaces, to enhance the realism and fidelity of missile defense training, exercises, and 6925
- Conduct "stand alone" training and further develop AAR capabilities for Force XXI command and control entities and their crews and staffs. 2100
- Continue research and development of advanced models and simulations to perform missile defense studies and analyses, by incorporating existing 2928
 - testbeds and migration to the DOD's High-Level Architecture (HLA).
- Provide modeling, simulation, and advanced visualization capabilities for senior decision makers via the Warfighting Analysis and Integration Center 2300
 - Exhibit R-2 (PE 0603308A) Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. Page 8 of 10 Pages 478 19581 Total

Project D997

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUSTIFICATIO	N SHEET (R-2 Exhib	it)	DATE February 1997	
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603308A Army Integration	Army Missi	PE NUMBER AND TITLE 0603308A Army Missile Defense Systems Integration	1	7
 FY 1998 Planned Program: 3996 Provide a high fidelity, interactive, synthetic battlefield environment as a tool for hands-on training, missile defense integration, utilization in exercises, demonstrations, and Force XXI initiatives, evaluation of battlefield operational issues. 500 Develop virtual prototypes of potential battlefield systems. 500 Develop long-haul, distributed after action review capabilities. Total 4996 	synthetic battlefield enviror e XXI initiatives, evaluatio ntial battlefield systems. r action review capabilities.	ic battlefield environment as a tool for hands-on traini initiatives, evaluation of battlefield operational issues. tlefield systems. review capabilities.	for hands-on tra operational issu	uining, missile defens es.	e integration, utilization in	
 FY 1999 Planned Program: 5974 Update and provide a high fidelity, interactive, synthetic battlefield environment as a tool for hands on training, missile defense integration, utilization in exercises, demonstrations. Force XXI initiatives, and evaluation of battlefield operational issues. 1000 Continue development of virtual prototypes of potential battlefield systems. 1000 Implement and utilize long-haul, distributed after action review capabilities. 500 Continue migration to DOD high level architecture. 1500 Conduct follow-on missile defense and space operation support studies and analyses. Total 9974 	interactive, synthetic bat XXI initiatives, and eval ototypes of potential batt stributed after action revivel architecture. and space operation supp	tlefield environm luation of battlefic lefield systems. iew capabilities. oort studies and a	ent as a tool for eld operational is nalyses.	hands on training, missues.	ssile defense integration, utiliza	ation
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 0 0	FY 1997 0 19581 19581	FY 1998 0 4996	FY 1999 0 9974		
Change Summary Explanation: Funding - FY 97 (+19581) Congressional increase to support essential operational and developmental requirements of the MDBIC. MDBIC.	1) Congressional increase ing adjustments (+4996/+	e to support essen +9974) for minim	tial operational a um essential ope	und developmental re rrational and develop	FY 97 (+19581) Congressional increase to support essential operational and developmental requirements of the MDBIC. FY 98/99 funding adjustments (+4996/+9974) for minimum essential operational and developmental requirements of the MDBIC.	
C. Other Program Funding Summary: There are no other related RDTE appropriation efforts. D. Schedule Profile: Due to the continuous nature of these efforts, milestones or events cannot be provided	ther related RDTE approl	priation efforts.	provided			
Project D997	Page	Page 9 of 10 Pages		Exhib	Exhibit R-2 (PE 0603308A)	Item 44
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RDT&E PROGRAM ELEMENT/PRO)JECT (ROJECT COST BREAKDOWN (R-3)	JOWN (R-3		DATE February 1997	997
вирбет астіліту 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603308A Army Missile Defense Systems Integration	; y Missile Del	fense Syste		РRОЈЕСТ D997
A. <u>Project Cost Breakdown</u> MDBIC Operations SBIR/STTR Total	FY 1996	EX 1997 19103 478 19581	FY 1998 4996 4996	FY 1999 9974 9974		
B. Budget Acquisition History and Planning Information: Not Applicable.	plicable.	·				
					,	
Project D997	Page	Page 10 of 10 Pages		Exhibit	Exhibit R-3 (PE 0603308A)	
		777				Item 44

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA'	TION SI	чЕЕТ (R	-2 Exhi	bit)		DATE Fet	February 1997	97
BUDG 4 - [BUDGET ACTIVITY 4 - Demonstration and Validation			PE NC 060	D603619A Landmine Warfare and Barrier	nπLE andmine	Warfare	and Bar	rier -		
	-			Yay	Auvailceu Developillein	everopiii	elit				
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	35768	27860	18882	11214	10609	17564	8600	9800	Continuing	Continuing Continuing
D005	D005 Landmine Advanced Development	0	0	3767	4258	4241	0	0	0	0	12266
D606	D606 Countermine/Barrier Advanced Development	35768	27860	15115	6956	6368	17564	8600	0086	Continuing	Continuing

Handheld Stand-off Minefield Detection System (HSTAMIDS), Ground Stand-off Minefield Detection System (GSTAMIDS) and for mine neutralization with the Explosive Stand-off Minefield Breacher (ESMB), and Anti-personnel Obstacle Breaching System (APOBS). This program element supports Program Definition and Risk Reduction Mission Description and Budget Item Justification: This program element provides for advanced development of new mine and countermine systems by prototyping minefield. It also provides for the initiation and/or continuation of advanced development of the Airborne Stand-off Minefield Detection System (ASTAMIDS), the Development of minefield command and control equipment will provide new capabilities in landmine warfare and will move the future Army toward the intelligent modern munitions technology, advanced development sensors, logic networks, fuzes, power sources, warhead components and modules into complete systems. (PDRR) efforts used to demonstrate and validate general military utility and is, therefore, appropriately placed in Budget Activity 4.

Page 1 of 9 Pages

Exhibit R-2 (PE 0603619A)

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION S	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation			PE N 06(PE NUMBER AND TITLE 0603619A Land Advanced Deve	PENUMBER AND TITLE 0603619A Landmine Warfare and Barrier - Advanced Development	y Warfare ient	and Bar	rier -	₫ ➡	РRОЈЕСТ D005
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost

A. Mission Description and Justification: This project will improve the capability of mines used by the United States Army and will move the future Army toward the intelligent minefield.

12266

0

0

0

0

4241

4258

3767

0

0

D005 Landmine Advanced Development

Acquisition Strategy: Intelligent Minefield (IMF) - competitive DEM/VAL contract followed by sole source EMD and initial production.

FY 1996 Accomplishments: Project not funded in FY 96

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program:

- Conduct interoperability study, trade-off analysis, system integration/analyses, and evaluate methods for Identification, Friend or Foe (IFF).
 - Initiate design and development of gateway, advanced acoustic sensor, and control station. 1315
 - 0001
 - Initiate software algorithm development.
 - Test and evaluation. 352 3767 Total

FY 1999 Planned Program:

- Continue design and development of gateway, advanced acoustic sensor, and control station. 1299
 - Continue software algorithm development. 963
- Fabricate components for test and evaluation.
- Conduct gateway, sensor and control station test and evaluation.
- System integration and analysis.

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Project D005

Exhibit R-2 (PE 0603619A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICATI	ON SHEET (F	R-2 Exhit	oit)		DATE Feb	February 1997	70
BUDGET ACTIVITY 4 - Demonstration and Validation	-		PE NUMBER AND TITLE 0603619A Landmine Warfare and Barrier Advanced Development	тіт <u>г</u> andmine evelopm	Warfare ent	and Bar	rier -	R O	РRОЈЕСТ D005
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request		FY 1996	FY 1997	F <u>Y 1998</u> 3765 3767	FY 1999 4259 4258	88 89 89			
C. Other Program Funding Summary RDTE, A Budget Activity 5 PE 0604808, Project D016, Mine Systems	FY 1996 4968	FY 1997 5384	FY 1998 FY 1999	FY 2000	FY 2001 11255	FY 2002 11960	FY 2003 21786	To Compl Cont	Total Cost Cont
D. Schedule Profile Complete trade-off studies Complete hardware fabrication and conduct contractor testing	FY 1996	4	FY 1997	4	FY 1998 2 3 X	88 X X	1 2 F	FY 1999 2 3	4 X
Project D005			Page 3 of 9 Pages	·		Exhibi	Exhibit R-2 (PE 0603619A)	03619A)	Itom 15

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BREAKE	00WN (R-3)	DATE (February 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603619A Landmine Warfare and Barrier - Advanced Development	dmine Warfar Hopment	re and Barrier -	
A. Project Cost Breakdown Primary Hardware Development Test and Evaluation Government Engineering Support Government Program Management Total	6 FY 1997	FY 1998 2215 352 813 387 3767	FY 1999 2105 1100 853 200 4258	
B. Budget Acquisition History and Planning Information Not Applicable				
Project D005	Page 4 of 9 Pages		Exhibit R-3 (I	Exhibit R-3 (PE 0603619A)
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	FION SE	HEET (R	-2 Exhil	bit)		DATE FAL	Fobriiany 1007	700
BUDGET ACTIVITY 4 - Demonstrat	BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060 Adv	PE NUMBER AND TITLE 0603619A Land Advanced Deve	PENUMBER AND TITLE 0603619A Landmine Warfare and Barrier Advanced Development	Warfare ent	and Bar			PROJECT D606
O	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D606 Countermine/Ba	Countermine/Barrier Advanced Development	35768	27860	15115	6956	6368	17564	8600	9800	Continuing	Continuing
A. Mission Descript of neutralizing, cleari Minefield Detection (GSTAMIDS), Explo The program provide	A. Mission Description and Justification: This project provides for advanced development of new countermine systems by prototyping advanced sensors for evaluation of neutralizing, clearing, breaching and detection concepts which will enhance the U.S. capability in countermine warfare. The program includes the Airborne Stand-off Minefield Detection System (HSTAMIDS), Ground Stand-off Minefield Breacher (ESMB), Anti-personnel Obstacle Breaching System (APOBS), and Off-Route Smart Mine Clearance (ORSMC) The program provides for proof-of-principle for these systems.	roject provide ncepts which dheld Stand- ther (ESMB), se systems.	s for advanc will enhanc off Minefiek Anti-persol	e the U.S. ce 1 Detection annel Obstacl	nent of new apability in c System (HST le Breaching	for advanced development of new countermine systems by prototyping advanced sensors for evaluation vill enhance the U.S. capability in countermine warfare. The program includes the Airborne Stand-off ff Minefield Detection System (HSTAMIDS), Ground Stand-off Minefield Detection System Anti-personnel Obstacle Breaching System (APOBS), and Off-Route Smart Mine Clearance (ORSMC).	systems by warfare. The iround Stand 'OBS), and (prototyping e program ir -off Minefie Off-Route Si	advanced sencindes the A	nsors for ev irborne Sta i System Learance (C	aluation nd-off RSMC) .
Acquisition Strateg phase. PDRR phase	Acquisition Strategy: ASTAMIDS and HSTAMIDS - Sole source production contracts to be awarded at the conclusion of EMD to the winner of a competitive PDRR phase. PDRR phase consists of two competing contracts; ESMB - Competitive development contracts followed by award of a sole source production contract.	OS - Sole sou tracts; ESMI	rce producti 3 - Competi	on contracts tive develop	to be award	ed at the con	clusion of E.	MD to the w a sole sour	vinner of a co	ompetitive l n contract.	DRR
FY 1996 Accomplishments:	Conducted system design and Preliminary Design Reviews for ESMB. Initiated Advanced Development design for HSTAMIDS. Completed ASTAMIDS development/fabrication of prototype. Conducted technical and Early User Tests of ASTAMIDS. Initiated effort to field ASTAMIDS prototypes for Bosnia Initiated effort to field HSTAMIDS prototypes for Bosnia Completed Test and evaluation of APOBS fixes Complete technical test and evaluation for ESMB. Complete technical test and evaluation for ESMB. Conduct Milestone II Review for ESMB. Develop HSTAMIDS prototype Complete development design and fabricate prototype/test hardware for ASTAMIDS Conduct technical and early user tests for ASTAMIDS Evaluate alternative ASTAMIDS technologies as directed by Congress Small Business Innovation Research/Small Business Technology Transfer (SBIR/ST)	I Preliminary tent design fc elopment/fabr y User Tests MIDS prototy an of APOBS or ESMB. pe I and fabricat ser tests for A DS technolog search/Small	Design Revi or HSTAMII ication of property of ASTAMII pe for Bosn fixes fixes ESMB. e prototype/ty STAMIDS gies as direct Business Te	ews for ESN DS. ototype. DS. ia nia nia ed by Congred by Congred	MB. e for ASTAl ress ransfer (SBI	Design Reviews for ESMB. r HSTAMIDS. cation of prototype. of ASTAMIDS. pe for Bosnia pes for Bosnia fixes fixes ESMB. STAMIDS ies as directed by Congress Business Technology Transfer (SBIR/STTR) Programs.	grams,				
Project D606				Page 5 of 9 Pages	9 Pages			Exhibit	Exhibit R-2 (PE 0603619A)	503619A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	STIFICATI	ON SH	EET (R	-2 Exhib	oit)		DATE Feb	February 1997	7
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUN 0603 Adva	PE NUMBER AND TITLE 0603619A Land Advanced Deve	PE NUMBER AND TITLE 0603619A Landmine Warfare and Barrier Advanced Development	Warfare ∍nt	and Barı	ier -	PRC D6	РRОЈЕСТ D606
 FY 1998 Planned Program: 5611 Initiate Advance Development Design and fabricate prototypes for GSTAMIDS 1521 Conduct developmental and early user tests for GSTAMIDS 7283 Complete Advanced Development Design for HSTAMIDS 700 Prepare Milestone II IPR documentation and EMD solicitation package for AST Total 15115 	and fabricate prototypes for GSTAMIDS tests for GSTAMIDS ign for HSTAMIDS n and EMD solicitation package for ASTAMIDS	otypes for C IDS JS itation packa	3STAMIDS	AMIDS					
 FY 1999 Planned Program: 6503 Continue Advanced Development Design for GSTAMIDS 453 Design/integration of sensors and platform (GSTAMIDS). Total 6956 	gn for GSTAMIE orm (GSTAMIDS); ():							
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 32893 32839 +2929	F <u>Y 997</u> 16464 27860	' <u>Y 997</u> 16464 27860	FY 998 6183	FY 999 4959	26 26 26			
FY 1998 Pres Bud Request	35768	27	27860	15115	9569	99			
Change Summary Explanation: Funding: FY 96 was increased (+3999) to fund ASTAMIDS/HSTAMIDS initiative to expedite delivery of prototypes to Bosnia but was offset by (-1070) of undistributed Congressional reductions and rescissions. In FY97 transfer of \$12M by direction of Congress from 0604808 D415 to continue ASTAMIDS DEM/VAL and evaluate alternative technologies. In FY 98 funds were increased (\$8.9M) to accelerate the initiation of GSTAMIDS and complete HSTAMIDS DEM/VAL phase. In FY 99 funds were increased by \$2.0M to accelerate GSTAMIDS. Schedule: GSTAMIDS initiation advanced by six months. ASTAMIDS DEM/VAL phase extended to 4Q97	CAMIDS/HSTAM nd rescissions. ongress from 060 occelerate the initiaccelerate GSTA onths. ASTAMID	fIDS initiati 14808 D415 tation of GS (MIDS.	ive to exped to continue TAMIDS a	OS/HSTAMIDS initiative to expedite delivery of cissions. ss from 0604808 D415 to continue ASTAMIDS I ate the initiation of GSTAMIDS and complete Herrate GSTAMIDS. ASTAMIDS DEM/VAL phase extended to 4Q97	of prototype S DEM/VA: HSTAMID	s to Bosnia l L and evalua S DEM/VAI	IDS/HSTAMIDS initiative to expedite delivery of prototypes to Bosnia but was offset by (-1070) scissions. ss from 0604808 D415 to continue ASTAMIDS DEM/VAL and evaluate alternative technologic rate the initiation of GSTAMIDS and complete HSTAMIDS DEM/VAL phase. ASTAMIDS DEM/VAL phase extended to 4Q97	t by (-1070) technologies	
C. Other Program Funding Summary EY 1996	96 FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To <u>Compl</u>	Total Cost
RDTE, A Budget Activity 5 PE 0604808A, Project D415, Mine Neutralization/ 1834	34 2172	22605	44133	41782	16275	13731	13807	Cont	Cont
Detection OPA 3, A Appropriation Project D606		Page 6 of 9 Pages	Pages			Exhibi	Exhibit R-2 (PE 0603619A)	(03619A)	







RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	LSUL M	IIFICAT	HS NOIL	IEET (R	-2 Exhil	oit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060 Adv	PE NUMBER AND TITLE 0603619A Landmine Warfare and Barrier Advanced Development	π∟E andmine evelopm	Warfare ent	and Bar	rier -	<u>α</u> Ω	РКОЈЕСТ D606
C. Other Program Funding Summary E72800, APOBS S11500, ASTAMIDS R68200, HSTAMIDS M80300, ESMB	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000 5966	FY 2001 6965 111144 5812 3413	FX 2002 12003 6830 7413	FY 2003 12009 7032 7417	To Compl Cont Cont Cont	Total Cost 12931 Cont Cont Cont
D. Schedule Profile	FY 1996 2 3	4	1 2	FY 1997 2 3	4	FY 1998 2 3)8 3 4	-	FY 1999 2 3	4
Conduct APOBS Flight Tests Conduct System Design and Preliminary Design Reviews for ESMB Initiate Adv Dev Design for HSTAMIDS Complete ASTAMIDS Development Tests and Early User Tests of ASTAMIDS Conduct Milestone II for ASTAMIDS Complete Technical Test and Conduct Milestone II Review for ESMB Conduct HSTAMIDS Technical Testing Conduct Milestone I for GSTAMIDS Conduct Milestone I for GSTAMIDS Conduct Milestone I for HSTAMIDS Conduct Milestone II for HSTAMIDS Conduct Milestone II for HSTAMIDS	*	×.	× ×	×	imes imes imes		× × ×	X X 2000 TO C C C C C C C C C C C C C C C C C C		
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BUDGET ACTIVITY 4 - Demonstration and Validation	ion and Val	lidation			РЕ NUMBE 060361: Advanc	PE NUMBER AND TITLE 0603619A Landmine Wa Advanced Development	nine Warfa opment	PE NUMBER AND TITLE 0603619A Landmine Warfare and Barrier Advanced Development	rrier -	.	РКОЈЕСТ D606
A. Project Cost Breakdown Development Primary Hardware Test and Evaluation Government Engineering Government Program Management SBIR/STTR Total	a <mark>akdown</mark> y Hardware ring 1 Management			FY 1996 27518 1906 5646 698 35768	<u>됩</u>	FY 1997 19318 1350 5512 1000 680 27860	FY 1998 11556 1749 1290 520 15115	FY 1999 5497 559 600 300			
Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Activity Vehicle Date E	cations Contract Method/Type or Funding	Award or Obligation	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Product Development Organizations Raytheon CPIF I	nt Organization CPIF CPIF	ns Nov 93 Nov 93	29204 19429	29204 19429	17461 14249	7943 3770	3900 1500			0 0	29304 19519
Grumman Coleman Research GDE Tracor TBD Misc. SBIR/STTR	CPIF CPIF CPIF TBD Various	May 96 May 96 Dec 95 TBD Various	6545 11663 14503	6545 11663 14503	0 0 0	1287 2042 10995 2079	3160 5338 3726 1694 680	2000 3883 5673	5497	0 0 0 Cont	6447 11263 14721 11170 3773 680
Support and Management Organizations NVESD/CECOM Misc. Test and Evaluation Organizations TECOM	gement Organi: 1 Organizations	zations				4419 1327 1906	3131 3381 1350	1290 520 1749	550 350 559	Cont Cont	9390 5578 5564
Government Furnished Property: Project D606	ihed Property:	None		Paş	Page 8 of 9 Pages 480	zes		Exhib	Exhibit R-3 (PE 0603619A)	0603619A)	Item 45

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BE	REAKDO	WN (R-3	3)	DATE Fe	February 1997	766
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603619A Land Advanced Deve	DE NUMBER AND TITLE 0603619A Landmine Wa Advanced Development	ine Warfa pment	PE NUMBER AND TITLE 0603619A Landmine Warfare and Barrier - Advanced Development	ł		РКОЈЕСТ D606
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1996 31710 31710	FY 1996 28116 5746 1906 35768	FY 1997 19998 6512 1350 27860	FY 1998 11556 1810 1749 15115	EY 1999 5497 900 559 6956	Budget to Complete	Total Program 96877 14968 5564
Project D606	Page 9 of 9 Pages	10	- -	Exhi	Exhibit R-3 (PE 0603619A)	0603619A)	
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RDT&E BUDGET ITEM JUST	FEM JUS	TIFICA	TION SI	HEET (F	IIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060	0603627A Smol	TITLE Smoke, O	0603627A Smoke, Obscurant and Target Defeating	t and Tar	get Defe	ıting	
			၂ ၁၇ႏ	A- IIIas	Naliced	System - Advanced Development	ובוונ			
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	2623	6246	0	0	0	0	0	5155	5155 Continuing Continuing	Continuing
DE78 Target Defeating Systems	0	0	0	0	0	0	0	5155	Continuing Continuing	Continuing
DE79 Smoke, Obscurant - Advanced Development	2623	6246	0	0	0	0	0	0	0	8869

of logistically supportable, high performance smoke and obscurant agents, munitions and devices to improve the survivability of the combined arms force and complement optical systems/smart weapons that operate in the full range of the electro-magnetic spectrum. These program elements support the demonstration/validation (DEMVAL) combined weapons systems. Improvements are sought across the entire multi-spectral range from visual through infrared (IR) and millimeter wavelengths (MMW) radar for incorporation into self-protection large area and projected smoke systems. The smoke obscuration technologies supported by this program enhance smoke systems as Mission Description and Budget Item Justification: U.S. Forces must be able to effectively neutralize and degrade directed energy weapon systems and threat electrocombat multipliers. This program element focuses on efforts associated with advanced technology development used to demonstrate general military utility to include demonstration and validation in the area of Smoke, Obscurant & Equip Systems Engineering and is correctly placed in Budget Activity 4.

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Exhibit R-2 (PE 0603627A)

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RDT&E	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SE	HEET (R	-2 Exhi	bit)		DATE Fel	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation	/alidation			PE NU 060 Sys	PE NUMBER AND TITLE 0603627A Smo System - Advan	⊓⊓∟Е imoke, O Ivanced I	PE NUMBER AND TITLE 0603627A Smoke, Obscurant and System - Advanced Development	t and Tar nent	PE NUMBER AND TITLE 0603627A Smoke, Obscurant and Target Defeating System - Advanced Development		PROJECT DE79
COST (In Thousands)	sands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DE79 Smoke, Obscurant - Advanced Development	d Development	2623	6246	0	0	0	0	0	0	0	8869
A. Mission Description and Justification: The Light Vehicle Obscuration Smoke System (LVOSS) is a self-defense smoke/obscurant device externally mounted on the vehicle. The LVOSS is expected to counter threat weapon systems operating in the visual and near infrared portions of the electro-magnetic spectrum. The LVOSS consists of the XM7 light weight discharger and installation kits for the infantry HMMWV equipped TOW and Military Police HMMWV variants.	tification: The Li to counter threat w er and installation l	ght Vehicle eapon systerkits for the in	Obscuration ns operating nfantry HMN	Smoke Syst g in the visua AWV equipp	em (LVOSS al and near ir ped TOW an) is a self-de ıfrared porti d Military P	fense smoke ons of the el olice HMMY	/obscurant c ectro-magne WV variants	Obscuration Smoke System (LVOSS) is a self-defense smoke/obscurant device externally mounted on the ms operating in the visual and near infrared portions of the electro-magnetic spectrum. The LVOSS consistantry HMMWV equipped TOW and Military Police HMMWV variants.	ally mounted. The LVOS	I on the S consists
Acquisition Strategy: Project DE79 Smoke, Obscurant-Advanced Development: The LVOSS is an in-house effort and will be type classified from the demonstration/validation phase. A make or buy study is being conducted/coordinated with IOC during 2QFY97 for production of the LVOSS grenade.	E79 Smoke, Obscu A make or buy stuc	rant-Advand ly is being c	ed Developi onducted/co	ment: The l ordinated wi	LVOSS is ar ith IOC durir	n in-house ef ng 2QFY97	fort and will for productic	be type class on of the LV	ssified from t OSS grenade	he 3.	
FY 1996 Accomplishments:	ments: LVOSS-Conducted Milestone I/II In-Process Review. LVOSS-Completed Prototype Design Package. LVOSS-Fabricated Pre-Production Test (PPT) Hardware. LVOSS-Conducted PPT.	I/II In-Proc Design Pacl ction Test (F	sss Review. rage. PT) Hardwa	ıre.							

FY 1997 Planned Program:

- LVOSS-Fabricate Production Qualification Test (PQT) Hardware. 1800
 - LVOSS-Conduct PPQT and Systems Operational Modeling. LVOSS-Systems Engineering, Planning and Documentation. 2558 1767
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 121 6246

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program: Project not funded in FY 99

Project DE79

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SUL ME	TIFICAL	ION SH	EET (R	-2 Exhik	oit)		DATE Feb	February 1997	997
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060;	PE NUMBER AND TITLE 0603627A Smo System - Advan	PE NUMBER AND TITLE 0603627A Smoke, Obscurant and Target Defeating System - Advanced Development	oscurant evelopn	and Tar lent	get Defea		PROJECT DE79
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request		EX 1996 3160 3248 -625 2623	A I	FY 1997 6380 6246 6246	FY 1998 5631	FY 1999 4798	88			
Change Summary Explanation: Funding: Due to accelerated RDTE, funds moved to procure LVOSS (FY98 -5631/FY99 -4798). Funds reprogrammed to higher priority requirements (FY 96 -537).	moved to pro	ocure LVOS ements (FY	S (FY98 -56 96 -537).	31/FY99 -4′	798).					
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
RDTE,A Budget Activity 5 PE 0604609A Project D200 Smoke/Obscurant	1915	0	0	703	937	2552	4814	8362	Cont'd	Cont'd
OPA-3 Appropriation G70700 - LVOSS M99104 - M157 Smoke Generator	5052	3472	2164	4752	2317				0	9233 8524
D. Schedule Profile	FY 1996 2 3	4	F)	FY 1997 2 3	4	FY 1998 2 3)8 3 4	-	FY 1999 2 3	4
LVOSS-Conduct Milestone I/II IPR LVOSS-Fabricate PPT Hardware LVOSS-Conduct PPT LVOSS-Fabricate PQT Hardware LVOSS-Conduct PQT LVOSS-Conduct PQT LVOSS-Systems Engineering Planning and Documentation Complete LVOSS-IOTE *Milestone completed	*	*	×	××	×					
Project DE79			Page 3 of 4 Pages	t Pages			Exhibi	Exhibit R-2 (PE 0603627A)	603627A)	
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RDT&E PROGRAM ELEMENT/P	'PROJECT COST BREAKDOWN (R-3)	T BREAK	DOWN (R-3	3)	DATE February 1997	, 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NU 060 Sys	PE NUMBER AND TITLE 0603627A Smo System - Advan	PE NUMBER AND TITLE 0603627A Smoke, Obscurant and System - Advanced Development	ant and Tar	PE NUMBER AND TITLE 0603627A Smoke, Obscurant and Target Defeating System - Advanced Development	PROJECT DE79
A. Project Cost Breakdown Primary Hardware Development Development Spt Equipment Acquisition Systems Engineering Integrated Logistics Support Quality Assurance Reliability, Maintainability and Availability Configuration Management Technical Data Production Qualification Test Initial Operational Test and Evaluation Contractor Engineering Support Government Engineering Support Program Management SBIR/STTR Total B. Budget Acquisition History and Planning Information: Not	FY 1996 285 85 351 95 85 75 85 400 254 2623	FY 1997 385 885 85 505 1115 85 75 175 300 2258 1200 150 151 6246	FY 1998	EX 1999		
Project DE79	Page 4 of 4 Pages	4 Pages		Exhibit	Exhibit R-3 (PE 0603627A)	· (4
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAL	FION SE	HEET (R	-2 Exhil	bit)		DAIE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060	PE NUMBER AND TITLE 0603640A Artillery Propellant Development	ritle rtillery P	ropellan	t Develop	oment	.	PROJECT DB91
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DB91 Artillery Propellant Development	20811	8322	8521	0	0	0	0	0	0	116329

The XM194 is being developed to allow "bolt-in/bolt-out" integration of the XM297 into the M109A6 Paladin SPH. Since the ASP-A was selected as the primary armament system for Crusader, beginning in FY97, ASP-A is funded in PE 0603854, Project D505. This program element focuses on the technology demonstration and validation of different types of charge increments, designated the XM231 and XM232. Each of these increments contains propellant, center core ignition elements, wear additives, flash and blast reducers and decoppering agent in a combustible case. MACS achieves zoning through the use of multiple increments of XM231 and XM232. MACS continues A. Mission Description and Budget Item Justification: This program element is a dual-faceted program focused on efforts associated with development of the Modular System (LIS), the XM200 Gun Mount and the XM194 Gun Mount. The XM297, LIS and the XM200 are being developed for the Crusader self-propelled howitzer (SPH). the older unicharge development which used a single charge increment, the XM230, to achieve zoning. The ASP-A consists of the XM297 Cannon, its Laser Ignition Artillery Charge System (MACS) and the 155mm Advanced Solid Propellant Armament (ASP-A). The MACS is a solid propellant charge system consisting of two the MACS and the 155mm ASP-A and is correctly placed in Budget Activity 4.

Acquisition Strategy: Not applicable

FY 1996 Accomplishments:

T. T. T. C.	the state of the s
• 18358	18358 MACS: Continued development and supported the XM297 program; ASP-A: Continued development of the XIVI297 cannon and its laser ignition
	system; initiated development of the XM200 gun mount.
009	600 Provided project management support and management engineering services.
• 1853	1853 ASP-A: Continued XM297 Engineering Development Testing (EDT), including completion of EDT phases 7 and 8 and second pre-tatigue test;

started the third pre-fatigue test; hydraulic fatigue testing of two each XM297 tubes and breeches.

Total

FY 1997 Planned Program:

- Continue development of MACS for 39 and 59 caliber type classification. 6186
 - Provide project management support and management engineering services. 009
 - Initiate preliminary testing for 39 caliber type classification. 1333
- Small Business Innovation Research /Small Business Technology Transfer (SBIR/STTR) Programs 203

Project DB91

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R	-2 Exhik	oit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603640A Artill	тге rtillery Р) गाग्म Artillery Propellant Development	Jevelop	ment	<u>а</u> О	PROJECT DB91
 FY 1998 Planned Program: 7821 Continue development of MACS for 52 caliber type classification. 300 Project management support and management engineering services. 400 Conduct Milestone III testing for type classification of MACS at 39 caliber. Total 8521 	ification. g services. ACS at 39 caliber.						
FY 1999 Planned Program: Project not funded in FY 99							
EX	EX 1997 18450 8322	FY 1998 9188	FY 1999 0				
Adjustments to Appropriated Value FY 1998 President's Budget Request 20811	8322	8521	0				
Change Summary Explanation: Funding: FY 97 Congressional decrement of 10128	0128						
C. Other Program Funding Summary FY 1996 FY 1997 Procurement, Ammo, Army, ER 8021	FY 1998 FY 1999	FY 2000 28818	FY 2001 40339	FY 2002 64516	FY 2003 67660	To Comp Cont	Total Cos Cont
D. Schedule Profile FY 1996	FY 1997	4	FY 1998 2 3	4	-	FY 1999 2 3	4
Acquisition Milestones Milestone II IPR (MACS) Milestone III IPR (MACS - XM231)				×			
Engineering Milestones Combustible Case Design Freeze (MACS) Initiate Production Readiness Review	×						
XM231/XM232 Production Readiness Review XM231 XM297 Cannon Milestones - 2nd Pre- Fatigue Test			×				
* Milestone completed							
Project DB91	Page 2 of 4 Pages			Exhibit	Exhibit R-2 (PE 0603640A)	603640A)	
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RDT	&E PROG	RAM ELI	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT C	SOST BF	EAKDC	JWN (R-	3)	DATE Fe	February 1997	266
BUDGET ACTIVITY 4 - Demonstration and Validation	on and Val	idation			PE NUMBER AND TITLE 0603640A Artill	AND TITLE A Artille	ry Propell	ס דודור Artillery Propellant Development	pment		PROJECT DB91
A. Project Cost Breakdown Product Development Support and Management Test and Evaluation	akdown nent		·	FY 1996 18358 600 1853	FY 1997 6186 600 1333	1997 6186 600 1333	FY 1998 7821 300 400	FY 1999 0 0			
SBIK/STIK Total				20811	∞	203 8322	8521				
<u>equisitic</u> Organiz	on History and ations	l Planning Inf	<u>ormation</u>								
Contractor or Government Performing	Contract Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to					Budget to	Total
Activity December December	Vehicle	<u>Date</u>	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
ARMTEC Defense SS/CPIF A	SS/CPIF	ns Aug 92	9539	9539	3944	1569	1826	2200		0	9539
Products, Coachella, CA											
Olin Corp, St.	FF	Jul 94	640	640	640					0	640
retersourg, rL Olin Corp,	FF	Sep 94	4760	4760	1297	287	688	2287		0	4760
Marion, IL (Load Assembly & Pk)											
DSTI, Greenbelt,	FF	May 94	2223	2223	1265	856				0	2223
Hi Shear,	FF	Mar 95	147	147	147					0	147
Torrence, CA					837	603	420	100		C	1870
(\$100K or less)					Ĉ.	777	24	001		>	1017
ARDEC, Picatinny Arsenal, NJ,	PO				58152	11594	2311	2684		0	74741
Kock Island, IL, Watervliet Arsenal, NY											
Project DB91				Page	Page 3 of 4 Pages	د		Exhit	Exhibit R-3 (PE 0603640A)	0603640A)	
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RD	RDT&E PROGRAM ELEMENT/	RAM ELI		OJECT	PROJECT COST BREAKDOWN (R-3)	REAKDC	WN (R-:	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation	tion and Val	idation			PE NUMBER AND TITLE 0603640A Artill	AND TITLE	y Propell	ЭТІТІЕ Artillery Propellant Development			PROJECT DB91
Contractor or Government Performing <u>Activity</u> Radford Army	Contract Method/Type or Funding Vehicle FFP	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996 2474	FY 1996 1573	FY 1997	FY 1998	FY 1999	Budget to Complete 0	Total Program 4047
Ammunition Plant, VA, Hercules Inc. Army Research	М				2704	1331	470	450		0	4955
Adelphi, MD Wright-Paterson AFB Davton OH	PO				100	51	270			0	421
Various activities (\$100K or less) SBIR/STTR					616	473	203	100		0	1189
Support and Management Organizations ARDEC, Picatinny PO Arsenal, NJ,	gement Organiz PO	ations			2958	009	009	300		0	4458
Various activities Test and Evaluation Organizations TECOM, Yuma, AZ PO ARDEC, Picatinny PO Arsenal, NJ	n Organizations PO PO				2944 597	1453	933	400		0 0	5330
Government Furnished Property: None	shed Property:	None									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	velopment d Management raluation				72176 2958 3541 78675	18358 600 1853 20811	6389 600 1333 8322	7821 300 400 8521			104744 4458 7127 116329
Project DB91				Pas	Page 4 of 4 Pages	S		Exhi	Exhibit R-3 (PE 0603640A)	0603640A)	
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RDT&E BUDGET ITEM JUS	TEM JUS		IIFICATION SHEET (R-2 Exhibit)	IEET (R	-2 Exhil	oit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060 Adv	PE NUMBER AND TITLE 0603645A Armor Advanced Deve	PE NUMBER AND TITLE 0603645A Armored Systems Modernization - Advanced Development	Systems ent	Moderni	zation -		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	181647	7803	2007	2008	20496	61894	94697	114741	Continuing	Continuing
DB88 Crusader Resupply Vehicle - Advanced Development	45923	0	0	0	0	0	0	0	0	127370
DQ19 Future Combat System	0	7803	0	0	2004	24843	28877	38457	Continuing	Continuing
D018 Future Scout Vehicle (FSV) - Advanced Development	0	0	2007	2008	18492	37051	65820	76284	Continuing	Continuing
D409 Crusader Self-Propelled Howitzer - Advanced Development	135724	0	0	0	0	0	0	0	0	546347

into the Demonstration and Validation phase. The Crusader system is the Army's next generation self-propelled howitzer and artillery resupply vehicle for Force XXI. This Mission Description and Budget Item Justification: On 15 Nov 94, the Crusader Projects (DB88 and D409) were approved by the Defense Acquisition Board to proceed and automotive enhancements to the M1A1 and M1A2 fleet. Several candidates' technologies are being currently evaluated for the optimum solution to anticipated threat Crusader Demonstration and Validation is in PE 0603854A, Project D505. These Crusader projects were combined in FY 97 based on the 14 Nov 94 DAB review. Project battalion/brigade and division/regiment levels. This project will fund finalization of requirements definition, design definition, sensor maturation, and software integration systems. Project D018 funds the development and demonstration phase of the Future Scout Vehicle (FSV). The FSV will replace the current ground scout systems in the DQ19 invests in high pay-off advanced technologies applicable to Abrams series tanks. The Army plans to develop and incorporate a series of fire control, survivability system will provide an overmatching fire power capability that will support the force commander's goal of dominating the maneuver battle and will incorporate advanced technologies to increase accuracy, rate of fire, survivability, mobility and ammunition handling speed, and decreased crew size. When fielded, Crusader will displace the M109A6 Paladin self-propelled Howitzer and M992 Field Artillery Ammunition Supply Vehicle in rapidly deployable and forward deployed forces. Continuation of efforts. All projects in this program element fund the advanced development phase of Army combat systems and are therefore correctly placed in Budget Activity 4.

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Exhibit R-2 (PE 0603645A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION S	HEET (R	R-2 Exhi	bit)		DATE Fe	February 1	1997
BUDGET ACTIVITY 4 - Demonstration and Validation			PE N 06 Ad	PE NUMBER AND TITLE 0603645A Armo Advanced Deve	отпте Armored Systems Modernization - Development	Systems ent	Moderni	zation -		РRОЈЕСТ DB88
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DB88 Crusader Resupply Vehicle - Advanced Development	45923	0	0	0	0	0	0	0	0	127370
A. <u>Mission Description and Justification</u> : The Crusader Resupply Vehicle (RSV) will increase ammunition payload and will provide automated, rapid transfer of ammunition, propellant and fuel to the Crusader self-propelled howitzer (SPH). The RSV will support the decentralized and continuous operations of the SPH, thereby increasing SPH mission effectiveness. Automation and robotics in the RSV will allow crew reduction resulting in life cycle cost benefits over the current system. The RSV will have increased ballistic and non-ballistic survivability features. Mobility improvements will allow the Crusader system to keep up with the maneuver force. Beginning in FY 97 this project merges into a single project along with D409 to form D505 Crusader - AD, PE 0603854A, Artillery Systems Advanced Development.	rusader Resu f-propelled h and robotics ability featur	pply Vehicle owitzer (SPI in the RSV ves. Mobility	t (RSV) will. The RS will allow c will moreow improvem	l increase ami V will suppor rew reductior ents will allo er - AD, PE	munition pay rt the decentr resulting in w the Crusad	load and wi alized and c life cycle cc er system to artillery Syst	Il provide au ontinuous oj ost benefits ci keep up wit iems Advanc	itomated, rajectations of over the current the maner ced Develop	pid transfer the SPH, the ent system. Liver force. I	of nereby The RSV Beginning
Acquisition Strategy: None Applicable										
 FY 1996 Accomplishments: 36249 Performed Development Phase I/II Contract Efforts; Downselected to Solid Propellant (SP) due to affordability and risk concerns; Conducted System Functional Review (SFR) and commenced preliminary design 7949 Continued Product Development Team support, management of the propellant technology and other management support 1725 Continued Management Support Total 45923 	se I/II Contra SFR) and con nent Team su port	tct Efforts; Innenced pre	Downselect liminary de gement of t	ed to Solid Pr sign he propellant	opellant (SP) technology a) due to affo ind other ma	rdability and inagement sı	l risk concel upport	ms; Conduc	pel
FY 1997 Planned Program: Project not funded in FY 97	ı FY 97									
FY 1998 Planned Program: Project not funded in FY 98	ı FY 98									
FY 1999 Planned Program: Project not funded in FY 99	FY 99									
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 59386 61054	•	FY 1997 0	FY 1998 0	FY 1999 0	66 0			
Adjustments to Appropriated Value FY 1998 President's Budget Request		-15131 45923	3 1	0	0		0			
Project DB88			Page 2 of	Page 2 of 16 Pages			Exhib	Exhibit R-2 (PE 0603645A))603645A)	
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RDT&E BUDGET ITEM JUST	M JUSTIF	ICATION	SHEET	IIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 1997	26
BUDGET ACTIVITY 4 - Demonstration and Validation		<u> </u>	PE NUMBER AND TITLE 0603645A Armc Advanced Deve	ID TITLE Armored Systems Modernization Development	Systems lent	Moderni	zation -		РКОЈЕСТ DB88
Change Summary Explanation: Funding: The FY 96 reduction is a result of an approved reprogramming (-12668) and undistributed Congressional reductions and rescissions (-2463).	eduction is a res	ult of an appro	ved reprograr	nming (-12668) and undistr	ibuted Cong	ressional rec	fuctions and	:
g Summary	FY 1996 FY	FY 1997 FY 1998	98 FY 1999	9 FY 2000	FY 2001	FY 2002	FY 2003	To Comp	Total Cost
PE 0604854A, Project D203 Crusader - ED PE 0604854A, Project D2KT Crusader			499	311211	434690 107	433920	202648 3485	Cont	Cont
Operational Test RDTE, A Budget Activity 4 PE 0603854A, Project D505 Crusader - AD	23	235795 322291	91 293920	.0 47102				0	921802
D. Schedule Profile	FY 1996	1	FY 1997 2 3	4	FY 1998	8 6	-	FY 1999 2 3	4
Conduct SFR and begin preliminary design	*		٠		ı		ı		
* Milestone completed									
Project DB88		Page 3	Page 3 of 16 Pages			Exhibi	Exhibit R-2 (PE 0603645A)	603645A)	
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RD	RDT&E PROGRAM ELEMENT/	SRAM EL	EMENT/PR	PROJECT (COST BI	ZEAKD	COST BREAKDOWN (R-3)	3)	DATE F	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation	tion and Va	lidation			PE NUMBER AND TITLE 0603645A Armon Advanced Deve	PE NUMBER AND TITLE 0603645A Armored Sys Advanced Development	on⊓le Armored Systems Modernization Development	ns Moder	nization -	d U	PROJECT DB88
A. Project Cost Breakdown Development Requirements Analysis/Component Maturation Phase I & II Contract Contractor Engineering Support Government Engineering Support Program Management Support Total	eakdown rements Analysi act ing Support ering Support ant Support	is/Component N	Aaturation	EY 1996 36249 1255 6694 1725 45923		FY 1997	FY 1998	FY 1999	7		
B. Budget Acquisition History and Planning Information	tion History an	d Planning Inf	ormation								
Performing Organizations Contractor or	izations Contract										
Government Performing	Method/Type or Funding		Performing Activity	Project Office	Total Prior to					Budget to	Total
Activity Vehicle I	Vehicle	<u>Date</u>	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
United Defense LP	SS/CPIF	Sep 94	TBD	TBD	22698	36249				0	58947
Martin Marietta, Burlington, VT	SS/CPFF	Mar 93	5965	2262	2202					D .	2262
ARDEC, Picatinny Arsenal NI	PO				1000	1000				0	2000
Support and Management Organizations	gement Organi	zations									
Dept of Energy -	MIPR				17287					0	17287
Labs, TN						7				c	7
Piw-Crusader,					1007	777				•	0/07
Arsenal, NJ	Cd				17638	2200				c	09000
ARDEC, Ficatinity Arsenal, NJ	2				1/036	7776				>	70200
Other Field	PO				5603	2372				0	7975
Activities Project DB88				Page	Page 4 of 16 Pages	es		EXT	Exhibit R-3 (PE 0603645A)	0603645A)	
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RDT&	RE PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT	COST BI	REAKDO	JWN (R-	3)	DATE Fe	February 1997	760
BUDGET ACTIVITY 4 - Demonstration and Validation	on and Val	idation			PE NUMBER AND TITLE 0603645A Armo	PE NUMBER AND TITLE 0603645A Armored Systands	PE NUMBER AND TITLE 0603645A Armored Systems Modernization Advanced Development	ns Moder	nization -		PROJECT DB88
Contractor or Contract Government Method/Type Awa Performing or Funding Obli Activity Vehicle Date Various other contracts Test and Evaluation Organizations TECOM, Yuma PO Proving Grd, AZ Government Furnished Property: None	Contract Method/Type or Funding Vehicle Organizations PO	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to <u>FY 1996</u> 8805	<u>FY 1996</u> 1255	FY 1997	FY 1998	FY 1999	Budget to Complete 0	Total <u>Program</u> 10060
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	lopment Management luation				29263 52184 81447	37249 8674 45923		•			66512 60858 127370
Project DB88				Pay	Page 5 of 16 Pages 494	es		Exh	Exhibit R-3 (PE 0603645A)	0603645A)	Item 48
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhil	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060 Adv	PE NUMBER AND TITLE 0603645A Armored Systems Modernization Advanced Development	пт <u>ге</u> vrmored 9 evelopm	Systems ent	Moderni	zation -	a 0	РРОЈЕСТ DQ19
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DQ19 Future Combat System	0	7803	0	0	2004	24843	28877	38457	38457 Continuing Continuing	Continuing

A. Mission Description and Budget Item Justification: The Army plans to maintain the capabilities of the Abrams tank with limited improvements until the 2015 to replacement to the Abrams, called the Future Combat System (FCS), will incorporate, to the extent possible, leap ahead capabilities in lethality, fire control, mobility, 2020 timeframe when a replacement to the Abrams will be needed. High payoff improvements will be investigated and produced where funding is available. The survivability, target acquisition, and sustainability.

General Dynamics Land Systems Division (GDLS) will remain the prime contractor for integration development and production. The acquisition strategy for the FCS has not been formed, but it will maximize competition in development and production. For FCS, emphasis is being placed on the choice of a main armament system, which Acquisition Strategy: The Army will maximize investments in the science and technology base for the selection of high payoff improvements to the Abrams tank. will be the principal driver of virtually all other aspects of the design.

FY 1996 Accomplishments: Program not funded in FY 96

FY 1997 Planned Program:

- Investigate improvements to M1A2 tank lethality (\$1.0M) and FCS concept studies (\$2.1) 3100
 - 2700 Analyze automotive improvements
- Propose M1A1 Command and Control improvements incorporating digital technology 1300
 - 512 Provide Government Support
- Small Business Innovation Research / Small Business Technology Transfer (SBIR / STTR) Programs 191 7803
 - otal 78(

FY 1998 Planned Program: Program not funded in FY 98

FY 1999 Planned Program: Program not funded in FY 99

Project DQ19

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Exhibit R-2 (PE 0603645A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUST	FICATI	ON SH	EET (R	-2 Exhil	oit)		DATE Feb	February 1997	7
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NUN 0603 Adva	PE NUMBER AND TITLE 0603645A Armo Advanced Deve	PE NUMBER AND TITLE 0603645A Armored Sys Advanced Development	PE NUMBER AND TITLE 0603645A Armored Systems Modernization Advanced Development	Moderni	zation -	PR(PROJECT DQ19
B. Project Change Summary FY 1997 President's Budget Appropriated Value		<u>FY 1996</u> 0	FY 1997 0 7803	199 <u>7</u> 0 7803	FY 1998 0	FY 1999	0 66			
Adjustments to Appropriated Value FY 1998 President's Budget Request		Q .	7	7803	0		. 0			
Change Summary Explanation: Funding: FY 97 (+7803) Congressional increase.	97 (+7803)	Congressio	nal increase	.•						
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
Abrams IOTE (D2UT) Abrams Improvement Program (D330)	0 40691	1415 69749	33287	0 6421	0 2982	0 3973	9923	0 34805	Con't	1415 Con't
D. Schedule Profile	FY 1996	4	FY 2	FY 1997	4	FY 1998 2 3			FY 1999 2 3	4
Engineering Studies Completed Critical Design Review-M1A1Digitization	,					×	×			
Project DQ19		į	Page 7 of 16 Pages	S Pages			Exhibi	Exhibit R-2 (PE 0603645A)	03645A)	
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RDT&E PROGRAM ELEMENT/	ELEMENT/PRO	SJECT C	SOST BR	EAKDO	PROJECT COST BREAKDOWN (R-3)	3)	DATE F	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NUMBER AND TITLE 0603645A Armored Sys Advanced Development	AND TITLE A Armor d Develo	PE NUMBER AND TITLE 0603645A Armored Systems Modernization Advanced Development	ns Moder	nization -		Р R ОЈЕСТ DQ19
A. Project Cost Breakdown M1A2 Tank Lethality & FCS Concept Analyses Automotive Analysis M1A1 Command and Control Improvements Government Support SBIR/STTR Total	· · · · · · · · · · · · · · · · · · ·	FY 1996	EY 1997 3100 2700 1300 512 191 7803	1997 3100 2700 1300 512 191 7803	FY 1998	FY 1999	ol.		
B. Budget Acquisition History and Planning Information	<u>Information</u>								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing or Funding Obligation Activity Vehicle Date	or Performing on Activity	Project Office <u>EAC</u>	Total Prior to	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations GDLS TBD					3900			Con't	3900
Sterling Hgts, MI TBD SBIR/STTR					3200 191			Con't	3200 191
ort and Management Organiza / TARDEC MIPR rren, MI and Evaluation Organizations					512			Con't	512
IBD Government Furnished Property Not Api	IBD Not Applicable							1 1100	
Subtotal Product Development Subtotal Support and Management					7291 512				7291
Subtotal Test and Evaluation Total Project					7803				7803
Project DQ19		Page	Page 8 of 16 Pages	S		Exh	Exhibit R-3 (PE 0603645A)	0603645A)	
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RDT&E BUDGET ITEM JUS'	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	الك Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation	:		PE N 060	PE NUMBER AND TITLE 0603645A Armored Systems Modernization Advanced Development	TITLE Armored evelopm	Systems	Moderni	zation -	<u>a</u> .	РКОЈЕСТ D018
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D018 Future Scout Vehicle (FSV) - Advanced Development	0	0	2007	2008	18492	37051	65820	76284	76284 Continuing Continuing	Continuing

communication systems, combined with sophisticated vehicle signature management, will significantly enhance the scout's capability to rapidly detect, identify, recognize, A. Mission Description and Justification: The Future Scout Vehicle (FSV), also known as the Future Scout and Cavalry System (FSCS), is the Army's next generation ground reconnaissance and intelligence gathering, combat vehicle system. FSV will provide Army reconnaissance elements a platform with significant improvements in vehicle mobility, survivability, lethality, target acquisition and communication capabilities through integration of advanced technologies. Advanced sensors and and hand-off multiple targets to field commanders under all conditions and in all environments.

concept. Extensive modeling and simulation will be utilized to meet and finalize system requirements, verify and validate the requirements, and establish a design definition baseline. The baseline will support follow-on Engineering and Manufacturing Development (EMD). The US Government is also attempting to establish an international Acquisition Strategy: Current plans call for the competitive selection of a system integrator who will be given responsibility for joint development of an FSV design cooperative effort with the United Kingdom to share development costs in, at a minimum, the Program Definition and Risk Reduction of a FSV program.

FY 1996 Accomplishments: Project not funded in FY 96

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program:

2007 Initiate Project Management (PM); Integrated Product Team Studies

2007 Total

FY 1999 Planned Program:

2008 Continue Project Management; Integrated Product Team Studies 2008

Total

Project D018

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Exhibit R-2 (PE 0603645A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	LIFICATIO	N SHE	ET (R-2	Exhib	it)		DATE Feb	February 1997	7
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND 0603645A Advanced	PE NUMBER AND TITLE 0603645A Armored Sys Advanced Development	nored S	ystems	⊃πτ∟E Armored Systems Modernization - Development	zation -	PR(РКОЈЕСТ D018
B. Project Change Summary FY. 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY. 1998 President's Budget Request	<u>FY 1996</u> 0	FY 1997 0		EY 1998 0 2007	FY 1999 0 2008	Ø1 0			
Change Summary Explanation: Increases in FY 98 (+2007) and FY 99 (+2008) due to program initiation.	Y 99 (+2008)	due to progra	ım initiatio	'n.					
 C. Other Program Funding Summary FY 1996 PE 604645A, D022 - Future Scout Vehicle D. Schedule Profile None 	FY 1997 E	FY 1998 FY	FY 1999 E	FY 2000	FY 2001	FY 2002	FY 2003 33338	To Compl Cont	Total Cost Cont
									,
Project D018	Pag	Page 10 of 16 Pages	ages			Exhibi	Exhibit R-2 (PE 0603645A)	03645A)	Item 48
		499							lem 40

RDT&E PROGRAM ELEMENT/PRO.	ECT CO	ROJECT COST BREAKDOWN (R-3)	AKDO	WN (R-3	<u>.</u>	DATE Fe	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation	<u>a</u> 0 V	PE NUMBER AND TITLE 0603645A Armored Sys Advanced Development	D TITLE Armore Develo	d System oment	5 ਜπ∟E Armored Systems Modernization Development	ization -	ă O	РРОЈЕСТ D018
A. <u>Project Cost Breakdown</u> Project Management Total	FY 1996	FY 1997		FY 1998 2007 2007	FY 1999 2008 2008			
B. Budget Acquisition History and Planning Information Porforming Organizations								
tet d/Type Award or Performing ding Obligation Activity e Date EAC anizations: None	Project Office <u>EAC</u> F	Total Prior to FY 1996	<u>FY 1996</u>	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Support and Management Organizations PM Office and IPT MIPR Test and Evaluation Organizations: None					2007	2008	Cont	Cont
Government Furnished Property None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation					2007	2008	Cont	Cont
Total Project					2007	2008	Cont	Cont
Project D018	Page 1	Page 11 of 16 Pages			Exhi	Exhibit R-3 (PE 0603645A)	0603645A)	
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fe	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060 Adv	PE NUMBER AND TITLE 0603645A Armored Systems Modernization - Advanced Development	ritle vrmored evelopm	Systems ent	Moderni	zation -	.	РRОЈЕСТ D409
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D409 Crusader Self-Propelled Howitzer - Advanced Development	135724	0	0	0	0	0	0	0	0	546347
A. Mission Description and Justification: The Crusader self-propelled howitzer (SPH) is the Army's next generation 155mm SPH system providing high payoff technology; appoint of the maneuver force. This project develops AFAS Advanced Technology Demonstrator (ATD); matures the alternative gun technology; matures packaging and formulation of the advanced propellant; matures the fire control/artillery componentry; and, provides funding for the Development Phases I/II efforts. SPH requirements include leap-ahead capabilities in range, rate-of-fire, sustained fire, time-on-target, accuracy, responsiveness, automated ammunition handling/resupply, reduced crew size and survivability. Beginning in FY 97 this project merges into a single project along with DB88 to form D505 Crusader - AD, PE 0603854A, Artillery Systems Advanced Development.	usader self-p force. This pr propellant, n range, rate-c	ropelled hov oject develc natures the f of-fire, susta iject merges	vitzer (SPH) pps AFAS Av ire control/an ined fire, tim into a single	is the Army dvanced Tec ttillery comp te-on-target, project alon	's next gene hnology Det oonentry; and accuracy, re ig with DB8	ration 155m monstrator (, 1, provides f sponsivenes 3 to form D5	m SPH syste ATD); matu unding for ti s, automate i05 Crusade	m providing res the altern ne Developn I ammunition	g high payoff native gun te nent Phases I n handling/re	chnology; /II efforts. supply, rtillery
 FY 1996 Accomplishments: 126548 Product Development - Continued developmental efforts under the Development Phases I/II contract; Downselected to solid propellant due to affordability and risk concerns; Conducted System Functional Review and commenced preliminary design 8302 Support and Management - Continued project management efforts, to include scientific and engineering management services 874 Test and Evaluation - Began contractor Development Test and Evaluation under the Development Phases I/II contract 	inued develog is; Conducte continued pro contractor De	d System Fu ject manage velopment	rts under the inctional Rev ment efforts, Fest and Eva	Developme iew and con iew and con it include suluation unde	nt Phases I/I nmenced pre cientific and rr the Develo	I contract; I liminary des engineering pment Phas	Oownselecte sign ; manageme es I/II contra	d to solid pr nt services ict	opellant due	ę
FY 1997 Planned Program: Program not funded in FY 97	n FY 97									
FY 1998 Planned Program: Program not funded in FY 98	n FY 98									
FY 1999 Planned Program: Program not funded in FY 99	n FY 99									
B. Project Change Summary FY 1997 President's Budget		FY 1996 126866	'	F <u>Y 1997</u> 0	FY 1998 0	FY 1999 0	0			
Appropriated Value Adjustments to Appropriated Value FV 1998 President's Budget Request		130459 +5265 135724	ο	0	0		0			
Project D409			Page 12 of 16 Pages	16 Pages			Exhib	Exhibit R-2 (PE 0603645A))603645A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ITEM JUS	TIFICAT	TION SH	LEET (R.	-2 Exhib);(DATE Feb	February 1997	26
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060 :	PE NUMBER AND TITLE 0603645A Armored Systems Modernization Advanced Development	πιε rmored S evelopme	ystems I	Moderniz	zation -	R Q	PROJECT D409
C. Other Program Funding Summary RDTE, A Budget Activity 5	FY 1996	FY 1997	FY 1998	FY 1999	EX 2000 311211	FY 2001 434690	FY 2002 433920	<u>FY 2003</u> 202648	To Compl Cont	Total Cost Cont
PE 0604854A, Project D503 Crusader - ED RDTE, A Budget Activity 5 PE 0604854A, Project D2KT Crusader				499	1156	107	109	3485	Cont	Cont
Operational Test RDTE, A Budget Activity 4		235795	322291	293920	47102				0	921802
PE 0603834A, Project D303 Crusader - AD RDTE, A Budget Activity 5 PE 0604645A, Project D175 MOFA	8509	6585							0	36459
D. Schedule Profile	FY 1996	4	F)	FY 1997 2 3	1	FY 1998 2 3	8 £ 4	1 F	FY 1999 2 3	4
Conduct SFR and begin preliminary design	**									
* Milestone completed										
Project D409			Page 13 of 16 Pages	16 Pages			Exhibit	Exhibit R-2 (PE 0603645A)	03645A)	
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RDI	RDT&E PROGRAM ELEMENT	RAM EL		PROJECT COST BREAKDOWN (R-3)	SOST BI	REAKDO	WN (R-	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation	tion and Val	lidation			PE NUMBER AND TITLE 0603645A Armo Advanced Deve	PE NUMBER AND TITLE 0603645A Armored Sys Advanced Development	ed Syster	PE NUMBER AND TITLE 0603645A Armored Systems Modernization Advanced Development	nization -	ă O	РRОЈЕСТ D409
A. Project Cost Breakdown Product Development Support and Management Test and Evaluation Total	eakdown nt ement			EY 1996 126548 8302 874 135724		FY 1997	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information	tion History and	l Planning Inf	<u>ormation</u>								
Performing Organizations Contractor or Contra Government Metho Performing or Fun Activity Vehicl	izations Contract Method/Type or Funding	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project ' Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Product Development Organizations United Defense, Comp/CPIF	ent Organization Comp/CPIF	ns May 91	76173	76173	76173					0	76173
Minneapolis, MN Martin Marietta,	SS/CPIF/CPF	Jan 92	TBD	100799	100799					0	100799
Pittstield, MA United Defense,	F SS/CPIF	Sep 94	TBD	TBD	83997	116504				0	200501
Minneapolis, MN ARDEC, Picatinny	PO				63042	5087				0	68129
Watervliet Arsenal, NY, Rock Island											
Arsenal, IL ARL, Aberdeen Proving Grd, MD/ Watertown,	PO				11799	1294				0	13093
MA Olin, Charleston, TN	SS/FFP	Sep 93	1988	1988	1988					0	1988
Project D409				Page	Page 14 of 16 Pages 503	ges		Exh	Exhibit R-3 (PE 0603645A)	0603645A)	Item 48

RD	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	RAM EL	EMENT/PR	OJECT	COST B	REAKDO	OWN (R-	3)	DATE F	February 1997	266
BUDGET ACTIVITY 4 - Demonstration and Validation	tion and Val	lidation			PE NUMBER AND TITLE 0603645A Armo Advanced Deve	PE NUMBER AND TITLE 0603645A Armored Sys Advanced Development	PE NUMBER AND TITLE 0603645A Armored Systems Modernization Advanced Development	ms Moder	nization -		РРОЈЕСТ D409
Contractor or	Contract										
Government	Method/Type	Award or	Pertorming Activity	Project	Total Drior to					Dudgette	Total
Activity	or runding Vehicle	Date	ACHARY	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Grumman,		Nov 93	4275	4275	4275					0	4275
Bethpage, NY											
Martin Marietta,	Comp/CPFF	Jan 93	4204	4204	4204					0	4204
Pittsfield, MA	Comn/CPFF	Feh 03	1806	1806	1806					0	1806
OK	TTT /dimo	2/021	0001		0001					>	1000
Various OGA's					23521	3663				0	27184
and Contractors											
Support and Management Organizations	agement Organiz	rations									
PM Crusader,					9372	2889				0	12261
Picatinny											
Arsenal, NJ	4				,	:					
ARDEC, Picatinny	PO				13172	4909				0	18081
Arsenal, NJ											
TRW, Redondo					3503					0	3503
Beach, CA											
Various OGA's					1612	504				0	2116
and Contractors											
Test and Evaluation Organizations	on Organizations										
TECOM, Yuma	PO				4885	874				0	5759
Proving Grd, AZ;											
CSTA, Aberdeen											
Proving Grd, MD											
Morton Thiokol,	SS/FPI	May 93	3307	3307	3307					0	3307
Elkton, MD	ļ		,	,							
Olin, Charleston,	SS/FPI	May 93	3168	3168	3168					0	3168
TBD-Ammo		TBD	TBD	TBD	N/A						
Purchase											
Project D409				Pag	Page 15 of 16 Pages	səz		H _X H	Exhibit R-3 (PF 0603645A)	0603645A)	
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RDT&E PROGRAM ELEMENT/PROJE	PROJECT COST BREAKDOWN (R-3)	REAKDO	WN (R-	3)	DATE F	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603645A Armo Advanced Deve	PE NUMBER AND TITLE 0603645A Armored Systandranced Development	ed Syster pment	PE NUMBER AND TITLE 0603645A Armored Systems Modernization - Advanced Development	nization -		РКОЈЕСТ D409
Government Furnished Property: None	: - :					:	
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	Total Prior to FY 1996 371604 27659 11360	FY 1996 126548 8302 874	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program 498152 35961 12234
Total Project	410623	135724					546347
					·		
	u 213- 21 u			n T	;; ;; ;;	V 4 4 6 0 0 0 0	
Project D409	rage 10 of 10 rages	S			EXIIIDIL K-3 (PE UOUSO43A)	0003043A)	Item 48
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RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SI	FIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE FeI	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation			PE N 060	PENUMBER AND TITLE 0603649A Engineering Modification Equipment - Advanced Development	тіт∟Е ingineeri evelopm	ng Modií ient	ication E	quipmen		PROJECT DG24
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DG24 M1 Breacher	13591	0	0	0	0	0	0	0	0	72458

will provide the Combat Engineer with significantly improved mission effectiveness and crew/vehicle survivability while clearing minefields and removing complex natural versatile/survivable full-width mine clearing blade with reactive depth control, a power driven excavating arm, and a commander's armored control station. The Grizzly and man-made obstacles at the forward edge of the battlefield. The Grizzly will be capable of moving with, and will be as survivable as, the force it is supporting. This program element/project is correctly placed in Budget Activity 4, focusing on efforts associated with advanced technology development to include demonstration and A. Mission Description and Budget Item Justification: The Grizzly (M1 Breacher) will be developed around the M1 Abrams tank chassis and will integrate a validation in the areas of mine clearing blade reactive depth control, power bus, vetronics, survivability, and hydraulics.

components/systems necessary to insure that the Grizzly will meet the mission profile required by the Operational Requirements Document. Through the production buy Acquisition Strategy: Research and development efforts have leveraged the accomplishments of the Combat Mobility Vehicle Advanced Technology Transition Demonstrator (CMV-ATTD) contract. Design modifications have been written into the Advanced Development contract for the powertrain and other chassis the vehicle will be sole sourced to United Defense Limited Partnership (UDLP), Ground Systems Division, York, PA.

FY 1996 Accomplishments:

- Completed Government Development Testing and Conducted Early User Testing 1100
 - Refined Design, Validated Logistics Functions, and Applied Engineering Changes 10118
 - Provided Government/Contractor Program Management and System Engineering 2073
 - Completed Dem/Val

Total

FY 1997 Planned Program: The project transitions to PE 0604649A, DG25, for the Engineering and Manufacturing Development (EMD).

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program: Project not funded in FY 99

Project DG24

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Exhibit R-2 (PE 0603649A)







RDT&E BUDGET ITEM JUS	JUSTIFICA	TIFICATION SHEET (R-2 Exhibit)	IEET (R	-2 Exhit	oit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NU 060 Adv	PE NUMBER AND TITLE 0603649A Engi	D TITLE Engineering I Development	ng Modifi ent	cation E	ठ मार∟E Engineering Modification Equipment Development		PROJECT DG24
B. Project Change Summary FY 1997 President's Budget Request Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request	FY 1996 9839 10115 +3476 13591		FY 1997 0 0	FY 1998 0	FY 1999 0	610 0			
Change Summary Explanation: Funding: FY 1996 (+3476) funding increase was required to extend the Demonstration and Validation phase. Schedule: Milestone II was accomplished in December 1996 and approval was received to enter the EMD phase. Technical: Testing validated system performance allowing the Grizzly program to enter EMD.	required to exten ember 1996 and a	d the Demons ipproval was r zzly program t	tration and V eceived to en to enter EMI	'alidation ph tter the EME).	ase.) phase.				
C. Other Program Funding Summary EX	FY 1996 FY 1997	FY 1998	FY 1999	FY~2000	FY 2001	FY 2002	FY 2003	To Compl	Total Cost
PE 0604649A, Project DG25, M1 Breacher Dev PE 0604649A, Project DG25, M1 Breacher Dev PA, WTCV, GZ3200, Breacher Spares PA, WTCV, G84000, Breacher Trng Dev	6501 34102	43748	51420 10444	58745 10964	39210 83399 397	19294 86313 2334 15726	125900 2666 1527	Cont'd Cont'd	253020 Cont'd Cont'd 17650
D. Schedule Profile F	FY 1996	- F	FY 1997	1	FY 1998	8 ¢	<u>-</u> д с	FY 1999	<
Conduct Development and Early User Testing Conduct Milestone II Review Award EMD Contract)	* *		-					+
* Milestone Completed									
Project DG24		Page 2 of 4 Pages	1 Pages			Exhibit	Exhibit R-2 (PE 0603649A)	03649A)	
									7

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DIECT C	OST BR	EAKDO	WN (R-	3)	DATE Fe	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603649A Engi Advanced Deve	AND TITLE A Engine d Develo	ЭПТЕ Engineering Mo Development	ोमा∟E Engineering Modification Equipment Development	Equipme	ı	PROJECT DG24
A. Project Cost Breakdown Development Engineering Logistics Support System Test & Evaluation System Management Total	EY 1996 6650 2050 2518 2373 13591	FY 1997	766	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contract Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
evelopment Organizations ense, SS-CPIF	60554	49948	10606					60554
York, PA (K. Mod) Other Contracts Various		645	166					811
Support and Management Organizations TACOM		4901	1488					6389
Warren, MI ANAD		250						250
Anniston, AL Other Gov't		1225	231					1456
Agencies Contract Support		230						230
To Milestone Kev Test and Evaluation Organizations TECOM APG, MD		856	780					1636
Project DG24	Page	Page 3 of 4 Pages	ş		Exh	Exhibit R-3 (PE 0603649A)	0603649A)	
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BUDGET ACTIVITY A Demonstration and Validation	INAIN EL	EMENITROSEC	PE NUMBER AND TITLE	AND TITLE	CST BALANDOWN (17-5) FEBRES NUMBER AND TITLE O603649A Fingineering Modification Equipment	dification	Equipme	uary 1	PROJECT
4 - Demonsulation and var			Advance	Advanced Development	pment				
Government Furnished Property Contract Method/Type Item Or Funding Description Vehicle Product Development Property	Award or Obligation <u>Date</u>	Delivery <u>Date</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Warren, MI Requisitions Variou Support and Management Property None Test and Evaluation Property TACOM Requisitions Variou	Various y None Various	Various Various	159	320					159
Warren, MI Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			50752 6606 1509 . 58867	10772 1719 1100 13591					61524 8325 2609 72458
					•	i L	;; ;; ;;		
Project DG24			rage 4 0j 4 rages	SS		X L	EXIIIDIL N-3 (PE 0003049A)	. 0003048A)	Item 49

RDT&E BUDGET ITEM JUS	USTIFICA	TIFICATION SHEET (R-2 Exhibit)	HEET (R	-2 Exhil	bit)		DATE Fel	February 1997	766
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NI 0 90	PE NUMBER AND TITLE 0603653A Adva	E NUMBER AND TITLE J603653A Advanced Tank Armament System	Tank Ar	mament	System		PROJECT DB99
FY 1996 COST (In Thousands) Actual	6 FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DB99 Advanced Tank Armament System	9335 11395	8982	8928	15070	26420	31726	25150		141779

A. Mission Description and Budget Item Justification: Our success in Desert Storm was due in large part to the superiority of our armament systems over those of the improvements. The program is developing and demonstrating a number of key gun and fire control technologies which offer significant payoffs in lethality for the current program is to maintain our superiority over increasingly more capable future enemy tanks. The ATAS program is one of the principal programs supporting tank lethality Iraqi Army. We were able to see, hit and kill the enemy long before they were even aware of our presence. The goal of the Advanced Tank Armament System (ATAS) ank fleet, the next upgrade to the M1A2 Abrams tank, as well as other future weapon system platforms.

battleffeld targets. Phase I technology, when applied to tank training devices, will also reduce tank crew training costs by reducing the amount of training necessary for new Gunners to perform proficiently. Phase II develops and matures a highly lethal tank main gun, the XM291, that can kill advanced enemy tanks at long range. Phase II also demonstration in FY 99. ATAS technology will be applied to Future Weapon Systems platforms such as the Future Scout and Cavalry Vehicle and Future Combat System The ATAS Program has two main phases. Phase I develops and demonstrates, in FY 97, autotarget tracking technology that is applicable to the current M1 Abrams series in both large and medium caliber to reduce the overall cost of Army weapon systems' development. The XM291 gun, advanced gun stabilization system, and autoloader develops advanced fire control system components consisting of a Continuous Muzzle Reference System, an Equilibrated Gun Turret Drive System, improved ballistics vibration and increase fire-on-the move accuracy. These gun components, and possibly an autoloader, will be tested and integrated into an M1A2 tank for a technology fielded systems. XM291 gun Engineering Manufacturing Development (EMD) will begin in FY 00 to prepare the cannon for possible integration into the Abrams tank. Maturation of the XM291 gun (including redesign for low cost M1A2 installation) and the gun stabilization system will continue through FY 98. This includes wear and target state estimating system. In FY 97, the program will study the inclusion of a compact autoloader for an FY 99 test in the ATAS Phase II, M1A2 test vehicle. resistant barrel coatings applied to the XM291 gun tubes to reduce gun barrel erosion, and modifications to the XM291 gun and the stabilization system to reduce gun coupled with the advanced fire control system components allow the tank crew to engage enemy targets at increased ranges, faster and more accurately than currently of tanks. Phase I is a requirements oriented, Combat Developer (User) directed program that increases tank lethality by allowing the tank crew to quickly kill enemy

The ATAS program is conducting prototyping, testing and early operational assessment of critical tank armament systems, subsystems, and components; identifying cost performance trade-offs. ATAS is also demonstrating component performance enhancements for application to future Abrams upgrades, and is appropriately placed in drivers and alternatives using modeling and simulation, and working with the User representative to establish performance objectives and identify cost-schedule-Budget Activity 4.

flow into the next major upgrade or Engineering Change Proposal (ECP) to the current Abrams tank. Several contractors and government agencies are used to develop or Acquisition Strategy: The technologies in ATAS will be demonstrated then transferred to PM Abrams for further technical development. Technologies in ATAS may integrate existing technologies.

Project DB99

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Exhibit R-2 (PE 0603653A)



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (I	۲-2 Exhibit		DATE February 1997	1997
BUDGET ACTIVITY 4 - Demonstrat	SUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603653A Adva	тіт <u>ге</u> Advanced Ta	ank Arma	TITLE Advanced Tank Armament System	PROJECT DB99
FY 1996 Accomplishments:	inments: Gun Technology - continued gun maturation program Phase I - designed/fabricated/integrated autotarget tracker hardware/software for M1A2 tank Phase II - procured objective fire control hardware, began software integration, initiated turret integration study	er hardware/software an software integration	for M1A2 tank 1, initiated turret i	ntegration st	брп	
FY 1997 Planned Program:	rogram: Gun Technology - continue gun maturation program including redesign of the gun mount for low cost M1A2 installation Phase I - complete autotarget tracker demonstration Phase II - complete fire control component hardware/software integration, continue turret integration study Ruggedize the Compact Autoloader design Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.	luding redesign of the ftware integration, co chnology Transfer (SE	gun mount for lo ntinue turret integ SIR/STTR) Progra	w cost M1A tration study ams.	2 installation	
FY 1998 Planned Program:	rogram: Phase II - complete fire control component testing Phase II - design/apply coatings to XM291 gun tubes Phase II - design/ fabricate modified XM291 gun Phase II - continue turret integration Phase II - design/fabricate stabilization system		,			
FY 1999 Planned Program: • 1370 Phase I • 2120 Phase I • 4838 Phase I • 600 Phase I Total 8928	rogram: Phase II - test coatings Phase II - test XM291 gun, stabilization system and autoloader as components Phase II - integrate XM291 gun, stabilization system and into M1A2 test tank Phase II - test complete XM291 gun, stabilization system	oloader as components d into M1A2 test tank n				
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	Summary FY 1996 Budget 9683 ropriated Value -620	<u>FY 1997</u> 9639 11395	FY 1998 9686	FY 1999 9693		
FY 1998 President's Budget Request	9335	11395	8982	8928		
Froject DB99		rage 2 of 3 rages 511			EXNIBIT K-Z (PE UBU3033A)	Item 50

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R	-2 Exhib	it)	DATE February 1997	v 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603653A Adva	π∟E dvanced ⁻	Fank Arma	ਮਸਮ Advanced Tank Armament System	PROJECT DB99
C. Other Program Funding Summary: Not applicable					
D. Schedule Profile FY 1996	FY 1997	-	FY 1998	FY 1999	99
		-		-	
*X *X					
Initiate Phase II turret integration only Begin integration of Phase II software X* X*					
with that water Complete Phase II fire control hardware/ software integration		×			
Award Compact Autoloader Contract Ruggedize Autoloader Design Complete Phase II fire control testing	×	×	;	×	
Begin Gun Tube Coating Analysis Apply Coatings to Gun Tubes Complete Gun Tube wear testing Begin XM291 Gun modification Finish XM291 modification fabrication Design Stabilization system & autoloader Test XM291 Gun, stab system		×	× ×	× × × ×	
Begin XM291 System/M1A2 integration Complete XM291 System /M1A2 integration Begin XM291 Gun System testing Complete XM291 Gun System testing *Milestone Completed				×	×
Project DB99	Page 3 of 5 Pages			Exhibit R-2 (PE 0603653A)	3A) Item 50
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RDT&E PI	RDT&E PROGRAM ELEMENT/PROJECT	EMENT/PRO		COST BF	REAKDO	BREAKDOWN (R-3)	3)	DATE F (February 1997	760
BUDGET ACTIVITY 4 - Demonstration and Validation	d Validation			PE NUMBER AND TITLE 0603653A Adva	AND TITLE A Advan	ced Tank	ਮਸਸ Advanced Tank Armament System	ıt System		PROJECT DB99
A. Project Cost Breakdown Primary Hardware Development/Contractor Primary Hardware Development/Government Quality Assurance/ARDEC Developmental Test & Evaluation Program Management (PM-TMAS) SBIR/STTR Total	nt/Contractor nt/Government tion MAS)		FY 1996 7135 700 300 600 600	FX 1997 7981 2186 500 100 400 228 11395	71997 7981 2186 500 100 400 228	FY 1998 5490 2432 350 300 410	FY 1999 5739 1829 350 600 410			
B. Budget Acquisition History and Planning Information	ry and Planning Info	ormation .								
Performing Organizations Contractor or Contract Government Method/Type Performing Activity or Funding Vehicle	ct I/Type Award or ling Obligation	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Product Development Organizations Texas Instruments C-CPFF Benet Laboratories OGA Hughes Aircraft SS-CPFF GDLS Western Design	Izations F Sep 90 라 Jan 93		20575	2733 1600 40	6935 800 100	4181 1886 100 2000 1700	1900 2432 3590	1939 1829 3800	63166	17688 71713 240 9390 1700
ARDEC OGA SBIR/STTR				200		300				500 228
Support and Management PM-TMAS/ARDEC				100	006	006	092	160	9700	13120
CSTA				100	009	100	300	009	25500	27200
Government Furnished Property: Not Applicable	erty: Not Applicable									
Project DB99			Page	Page 4 of 5 Pages	S		Exhi	Exhibit R-3 (PE 0603653A)	0603653A)	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BI	REAKDO	JWN (R-	3)	DATE F	February 1997	160
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603653A Adva	AND TITLE	ced Tank	D TITLE Advanced Tank Armament System	nt System		PROJECT DB99
Subtotal Product Development Subtotal Support and Management	Total Prior to <u>FY 1996</u> 4773	FY 1996 9335	FY 1997 11395	FY 1998 8982	FY 1999 8928	Budget to Complete 98366	Total Program 141779
Subtotal Test and Evaluation Total Project	4773	9335	11395	8982	8928	98366	141779
Project DB99	Page 5 of 5 Pages	<i>S</i> 2		Exh	Exhibit R-3 (PE 0603653A)	0603653A)	
	514						Item 50

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RDT&E BUDGET ITEM JUST	EM JUS	TIFICA.	TION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe!	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 0 0 0	PE NUMBER AND TITLE 0603713A Army	PE NUMBER AND TITLE 0603713A Army Data Distribution System	a Distribu	ution Sys	tem		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	6360	23170	21214	10049	5074	3699	3734	3755	0	77168
D370 JTIDS/EPLRS	6699	19632	21214	10049	5074	3699	3734	3755	0	72969
D2QT EPLRS/JTIDS Operational Test	661	3538	0	0	0	0	0	0	0	4199

Mission Description and Budget Item Justification: The Army Data Distribution System (ADDS), which consists of the Enhanced Position Location Reporting System capabilities to the soldier and his unit commander. These projects focus on efforts associated with advanced technology development used to demonstrate general military surface vehicle and airborne vehicle user units to achieve range extension. It has been designated specifically to meet the data communications requirements of emerging tactical automated data processing and sensor based systems. The ADDS will provide reliable, real-time, secure, jam-resistant data communications and position location (EPLRS), the Joint Tactical Information Distribution System (JTIDS), and the Near Term Digital Radio (NTDR) provides support to the Army's air defense, fire support, battlefield. It is capable of providing multi-functions; data communications, unit locations and unit identification. The ADDS network automatically utilizes manpack, maneuver control, intelligence and combat service support automated system. Project D370 is capable of "digitizing data messages" that must be transmitted on the utility to include demonstration and validation in the area of Army Data Distribution and are correctly placed in Budget Activity 4.

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Exhibit R-2 (PE 0603713A)

RDT&E BUDGET ITEM JUS	EM JUS		TION SI	FIFICATION SHEET (R-2 Exhibit)	2-2 Exhi	bit)		DATE Fel	February 1997	260
BUDGET ACTIVITY 4 - Demonstration and Validation			PE N	PE NUMBER AND TITLE 0603713A Army Data Distribution System	ттге Vrmy Data	a Distrib	ution Sys	stem	1	РРОЈЕСТ D370
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D370 JTIDS/EPLRS	5699	19632	21214	10049	5074	3699	3734	3755	0	72969

capability throughout the fighting force for the Digital battlefield of the 21st century. To allow the NTDR to evolve and to make maximum use of technology insertion, it is based on an open architecture which allows programmability and future expansion. The project will provide reliable, real-time, secure, jam-resistant data communications and position location capabilities to the soldier and his unit commander. This project provides data distribution support to the Army's air defense, fire support, maneuver Communication data backbone for Platoon to Brigade for Force XXI. It is the one of the seven major elements which will provide a seamless digital communication A. Mission Description and Budget Item Justification: The Near-Term Digital Radio (NTDR) is an Non-Developmental Item (NDI) Research and Development program to procure systems for test and experimentation that will lead to production/fielding for Force Package 1 units. The program's vision is to create the Army control, intelligence and combat service support automated systems, and is capable of "digitizing data messages" that must be transmitted on the battlefield

Distribution System (MIDS) program is a Navy managed joint services development program currently viewed as an eventual low cost replacement for parts of the JTIDS Acquisition Strategy: The NTDR program is following a Non-Development Item (NDI) approach with an RDTE contract awarded competitively in January 1996. The experiments both at EPG and in Division XXI which will focus on enhancing the command and control aspects of maneuver warfare. The Multifunctional Information Near Terminal Digital Radio acquisition strategy is to fabricate NTDR radios for an IOT&E in 2QFY99. In FY 97, the NTDR units will be utilized for testing and family of high speed data terminals. Remaining effort in FY97 for the EPLRS program is for required NCS-E(D) documentation.

FY 1996 Accomplishments:

- JTIDS Software Development Completion
- Net Control Station (Downsize) Software Development Completion
- NTDR Program Hardware and Software development
- Program Management/Test Activities

9699

FY 1997 Planned Program:

- Continue NTDR Program 15108
- Program Management Activities for NTDR 1588
- MIDS Contract Development/Engineering Support
 - NTDR Testing 1392
- Documentation for EPLRS Net Control Station Downsized (NCS-E(D)) 617
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)

19632

Project D370

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Exhibit R-2 (PE 0603713A)





### PROJECTION For a proper solution of the project states and states are project states as a series of the project states are project states as a series of the project states are project states as a series of the project states are project states are project states as a series of the project states are project stat	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-	2 Exhibi	it)	DATE Febr i	February 1997	7
the MIDS Development/Engineering Support arivities (NTDR) ac(Complete NTDR Program Hardware/Software Development GPE, Travel) the MIDS Development/Engineering Support arivities (NTDR) the MIDS Development/Engineering Support ac(Complete NTDR Program Hardware/Software Development Activities for NTDR) the MIDS Development/Engineering Support ac(Complete NTDR) the MIDS Development/Engineering Support the MIDS Development/Engineering Support GPE, Travel) CA	BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TI 0603713A AI	⊓∟E rmy Data ∣	Distribution (system	PR(D3	ыест 1 70
Part Activities for NTDR DRA URB SMTDR Program Hardware/Software Development 1) FY 1996 FY 1997 FY 1996 FY 1997 FY 1996 FY 1997 FY 1996 FY 1997 FY 1998 FY 1999 FY 1998 FY 1999	FY 1998 Planned Program: 2595 Continue MIDS Development/Engineering Support 2031 Program Management Activities for NTDR 4618 Test Activities (NTDR) 11783 Continue/Complete NTDR Program Hardware/Software Der 187 Misc. (GFE, Travel) Total 21214	velopment					
FY 1996 FY 1997 FY 1998 FY 1999 FY 1999 FY 1990 S856	FY 1999 Planned Program: 3862 Continue MIDS Development/Engineering Support 1347 Program Management Activities for NTDR 3027 Test Activities (NTDR) 1621 Continue/Complete NTDR Program Hardware/Software Der 192 Misc. (GFE, Travel) Total 10049	velopment					
FY 1996 FY 1992 FY 1999 FY 2000 FY 2001 FY 2002 FY 2002 Complement	Summary FY Budget	FY 1997 20169 19745	FY 1998 22884	FY 1999 10907			
FY 1996 FY 1996 FY 2000 FY 2000 FY 2000 FY 2000 Complex A0625 A0522 Complex A0625		19632	21214	10049			
Profile FY 1996 FY 1997 FY 1998 FY 1999 FY 1 Z 3 4 1 2 3 4 1 2 3 4 OT/MS Tests Start X* X* X	FY 1996 FY 1997 F ^x 44563 67927	E				To <u>Compl</u> Cont	Total Cost Cont
P Award X* X* 'OT/MS Tests Start X* X* 'MS Tests Completion X X Decision X X Page 3 of 9 Pages Exhibit R-2 (PE 0603713A) Item 51.7	FY 1996	Y 199	4	Y 199		Y 1999 3	4
Page 3 of 9 Pages Exhibit R-2 (PE 0603713A) 51.7 Item	*X	×					
		ge 3 of 9 Pages 517		Î	thibit R-2 (PE 060		Item 51

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit	(DATE February 1997	1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603713A Army Data D	отпте Army Data Distribution System	1	PROJECT D370
FY 19	FY 1997 1 2 3 4 1	FY 1998 2 3 4	FY 1999	4
Start FY94 EDM Delivery Complete FY94 EDM Delivery Class 2M LRIP Delivery Class 2M FRP Delivery Class 2M FRP Delivery Start Fielding EDM Terminals MIDS Development Test MIDS Development Test MIDS OT/Multiservice Test MIDS Contract Award NTDR Award NTDR Award NTDR Award NTDR Operational Assessment NTDR Operational Assessment NTDR IOT&E** Complete NCS-E(D) OT *Event has been completed **NTDR IOT&E Proposed from FY00	× ×	\times \times	× × ×	××
Project D370	Page 4 of 9 Pages	Exhibi	Exhibit R-2 (PE 0603713A)	
	518			Item 51

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RD	RDT&E PROG	PROGRAM ELEMENT/	EMENT/PR	PROJECT C	SOST BI	REAKDO	COST BREAKDOWN (R-3)	<u></u>	DATE Fe	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation	ation and Val	idation			PE NUMBER AND TITLE 0603713A Arm)	_	Data Distr	Data Distribution System	/stem	<u>а</u>	PROJECT D370
A. Project Cost Breakdown Contractor Engineering Support Program Management Support Miscellaneous (NTDR-GFE) Testing SBIR/STTR Total	reakdown aring Support ent Support DR-GFE)			FY 1996 4323 730 125 521 5699	EV.	EY 1997 16201 1588 0 1392 451 19632	EY 1998 17078 2218 0 1918 21214	EY 1999 7010 1539 0 1500			
B. Budget Acquisition History and Planning Information	ition History and	Planning Inf	ormation								
Performing Organizations Contractor or Contra Government Metho Performing or Fur	nizations Contract Method/Type or Funding	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Product Development Organizations SBIR/STTR NTDR System TBD	nent Organizatio TBD	ns TBD	7239	7239			451	2700	1527	3012	451 7239
Integration Science	MIPR	AUG 96	151	151	0	151	0	0	0	0	151
International Misc. Venntronix Corp,	MIPR	TBD APR 96	7492 · 420	7492 420	00	0 420	476	2595 0	3862	556	7489
Eatontown, NJ Lockheed/Martin ITT Ft Wayne TBD VISICOM	MIPR C/CPIF/FFP TBD SS/CPFF	MAR 97 JAN 96 TBD JUN 96	2001 31438 9057 35	2001 31438 9057 35	0000	1380 2337 0 35	617 15108 . 0	0 11783 0	0 1621 0	0 500 9057 0	1997 31439 9057 35
Support and Management Organizations Misc. MIPR DEC Misc. MIPR TBD	agement Organis MIPR MIPR	zations DEC 95 TBD FFR 06	125 2128 7093	125 2128 7093	000	125 0 730	0 0	0 0 2218	0 0 1539	0 2128 1009	125 2128 7084
Project D370	X IIIA				0	ļ		Exhi	Exhibit R-3 (PE 0603713A)	0603713A)	Item 51
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RDT&E	ROGRAM	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ROJECT	COSTB	REAKD(OWN (R-	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation	nd Validation			PE NUMBER ANI 0603713A	PE NUMBER AND TITLE 0603713A Army	ЭТІТLE Army Data Distribution System	ribution S			PROJECT D370
Contractor or Contract Government Method/Ty Performing or Funding Activity Vehicle	Contract Method/Type Award or or Funding Obligation Vehicle Date	r Performing on Activity EAC	Project Office EAC	Total Prior to EY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
FPG MIPR MIPR EPG MIPR MIPR MIPR	MAY 96 FEB 96	. 0 6 4916 423	0 4916 423	000	0 98 423	0 1392 0	0 1918 0	0 1500 0	0	4908
Government Furnished Property: N/A Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	operty: N/A int ement				4323 855 521 5699	16652 1588 1392 19632	17078 2218 1918 21214	7010 1539 1500 . 10049	13125 3137 16262	58188 9337 5331 72856
Project D370			Pa	Page 6 of 9 Pages	es		Exh	Exhibit R-3 (PE 0603713A)	0603713A)	
				520					E	Item 51



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	LEM JUS	TIFICA	FION S	HEET (F	R-2 Exhi	bit)		DATE Fe	February 1997	266
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060	PE NUMBER AND TITLE 0603713A Arm)	TITLE Army Dat	PE NUMBER AND TITLE 0603713A Army Data Distribution System	ition Sys			PROJECT D2QT
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D2QT EPLRS/JTIDS Operational Test	661	3538	0	0	0	0	0	0	0	4199
A. Mission Description and Budget Item Justification: This project finances the direct costs of planning and conducting operational testing and evaluation of the EPLRS/JTIDS by the Operational Test and Evaluation Command (OPTEC). JTIDS is an Acquisition Category (ACAT) I system with an Initial Operational Test and Evaluation (IOT&E) beginning in 1 QTR FY97. Operational Testing is conducted under conditions, as close as possible, to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the system.	cation: This ition Comman perational Tepperational Tepperational Tepperational Arm	project finan d (OPTEC). sting is cond y leadership	ces the direc JTIDS is an ucted under with an inde	t costs of pl Acquisition conditions,	anning and c Category (A as close as p t and evaluat	conducting of ACAT) I syst ossible, to th	erational te em with an ose encoun	sting and ev Initial Oper: tered in actu suitability o	aluation of a ational Test al combat w	the and ith typical
FY 1996 Accomplishments:	ng ort									
FY 1997 Planned Program: 2897 Conduct JTIDS OT 337 JTIDS OT Evaluation 217 OT Unit (Test Players) Support 87 Small Business Innovation Research/Small Total 3538	ort esearch/Small		Business Technology Transfer (SBIR/STTR)	ransfer (SBI	R/STTR)					
FY 1998 Planned Program: Project not funded in FY 98	FY 98									
FY 1999 Planned Program: Project not funded in FY 99	FY 99									
B. Project Change Summary FY1997 President's Budget Appropriated Value		FY 1996 678 685	FY	FY 1997 3653 3538	FY 1998 10	FY 1999	6			
Adjustments to Appropriated Value FY1998 Pres Bud Request		-24 661		3538	0					
Change Summary Explanation: Funding - FY 98 - Realigned to higher priority programs (-10)	Realigned to h	igher priorit	y programs	(-10)						
Project D2QT			Page 7 of 9 Pages) Pages			Exhibi	Exhibit R-2 (PE 0603713A)	603713A)	
			521							Item 51

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603713A Army Data Distribution System	PROJECT m D2QT
C. Other Program Funding Summary: Not applicable		
	FY 1997 FY 1998	FY 1999
	2 4 1 4 5	
		History (20)
Project D2QT	y rages	1
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RDT&E PROGRAM ELEMENT/PROJECT		COST BI	SEAKD	COST BREAKDOWN (R-3)	3)	DATE F	February 1997	766
BUDGET ACTIVITY 4 - Demonstration and Validation	,	PE NUMBER AND TITLE 0603713A Army	AND TITLE	^{Б тп∟Е} Army Data Distribution System	ribution S	ystem		PROJECT D2QT
A. Project Cost Breakdown Operational Test and Evaluation SBIR/STTR Total	EY 1996 661 661	EY	FY 1997 3451 87 3538	FY 1998 0	FY 1999 0	6100		
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations: None Support and Management Organizations: None	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Test and Evaluation Organizations: OPTEC, FT BLISS MIPR 3/31/96 4314 SBIR/STTR	4314	0	661	3451 87	0	0	0	4112
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			661	3538 3538				4199
Project D2OT	Pag	Page 9 of 9 Pages	\$		Ü	Exhibit R-3 (PE 0603713A)	0603713A)	
		523						Item 51

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (F	R-2 Exhi	bit)		DATE FeI	February 1997	766
вирбет АСТІИІТУ 4 - Demonstra	BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060 Adv	PE NUMBER AND TITLE 0603745A Tacti Advanced Deve	PENUMBER AND TITLE 0603745A Tactical Electronic Support Systems Advanced Development (TIARA)	lectronic ent (TIAF	։ Suppor ՀA)	t System	ı	РRОЈЕСТ D535
,	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D535 Intelligence Fu	Intelligence Fusion Analysis Demonstration	5630	3941	0	0	0	0	0	0	0	20104
A. Mission Descriptechnologies to intel project supports the prototype upgrades	A. Mission Description and Budget Item Justification: This Program Element funds application and validation of advanced computer software and hardware technologies to intelligence fusion analysis functions and prototype development, integration and evaluation of improved tactical intelligence fusion capabilities. This project supports the urgent requirement for an automated tactical intelligence processing system through technology insertion into, and development and evaluation of prototype upgrades to the All Source Analysis System (ASAS), both during development and after fielding and therefore is appropriately placed in Budget Activity 4.	ation: This is and prototy nated tactica	Program Ele /pe developi intelligenc	ement funds ament, integra e processing development	application ation and evaluation asystem thro	rogram Element funds application and validation of advanced computer software and hardware pe development, integration and evaluation of improved tactical intelligence fusion capabilities. This intelligence processing system through technology insertion into, and development and evaluation of, oth during development and after fielding and therefore is appropriately placed in Budget Activity 4.	n of advance nproved tact igy insertion nerefore is ap	ed computer ical intellige into, and de opropriately	software and nce fusion ca evelopment a placed in Bu	d hardware apabilities. ınd evaluatic	This on of, ty 4.
Acquisition Strates systems. The effort (FFRDC), and some	Acquisition Strategy: This project consists of studies, prototype development and evaluation of the integration of tactical intelligence fusion capabilities into existing systems. The efforts are for joint advanced technology research via contractors, Joint Propulsion Laboratory (JPL), a Federally Funded Research and Development Center (FFRDC), and some funds flowing down to colleges and universities as grants under oversight of JPL.	lies, prototyp ogy research s and univers	e developm via contract iities as gran	ent and evaluors, Joint Protest under ove	nation of the opulsion Lal rsight of JPJ	development and evaluation of the integration of tactical intelligence fusion capabilities into existing ia contractors, Joint Propulsion Laboratory (JPL), a Federally Funded Research and Development Ceties as grants under oversight of JPL.	of tactical int .), a Federal!	telligence fu ly Funded R	sion capabili esearch and	ities into exi Developme	sting nt Center
FY 1996 Accomplishments: • 3000 Suppor demons	shments: Support battlefield visualization technology demonstration. Developed and evaluated Army Warfighter Experiments and the joint precision strike demonstration program of advanced large screen, automated graphical displays which provided enhanced situational awareness for tactical	on technolog vanced large	sy demonstri screen, autc	ation. Devel omated graph	oped and ev iical display	aluated Arms	y Warfighter ided enhanc	r Experimen ed situationa	ts and the join	int precision for tactical	strike
1000		elop and app velopment/as ttion of colled analysis to	ly advanced ssessment/pretion managools, incorpo	technologie ediction, col ement tools a rating the ad	s to intellige lection man for more aut lyanced tem	agement, and comated, responder correlated plate correlated in netry tools in	rototypes for a dayanced a sonsive tacticion technique support of l	r expanded can all support; cal support; les used in the	apabilities a correlation. extended CI/or situation are situation are and low in	nd performa This include HUMINT a assessment p	nce in the sd nalysis rototype
• 780		ure and integ	grate the hig	h-performan	ce, expande	d tech base p	rototype cap	abilities into	operational	ASAS prot	otypes and
• 850		elopment, ev nto mainline	aluation and ASAS devel	I refinement lopment and	of operation acquisition	al prototypes per the Joint	s of function Prototyping	al and perfol Plan.	rmance upgr	ades/improv	ements to
Total 5630											
Project D535				Page 1 of 4 Pages	4 Pages			Exhib	Exhibit R-2 (PE 0603745A))603745A)	,

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RDT&E BUDGET ITEM JUSTIFICATI	TIFICATION SHEET (R-2 Exhibit)	R-2 Exhibi	it)	DATE February 1997	1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603745A Tacti Advanced Deve	าย NUMBER AND TITLE 0603745A Tactical Electronic St Advanced Development (TIARA)	PE NUMBER AND TITLE 0603745A Tactical Electronic Support Systems Advanced Development (TIARA)	ort Systems -	РRОЈЕСТ D535
 FY 1997 Planned Program: 500 Continue to investigate, develop and apply advanced software and hardware processing, storage, display and input/output (I/O) technologies to technologies to technologies of high-performance, expanded intelligence fusion capabilities. 2495 Continue to evaluate, configure and integrate tech base prototype capabilities into operational ASAS prototypes and ASAS Block II development. 850 Continue to support the development, evaluation and refinement of ASAS operational prototypes and their integration into mainline ASAS development and acquisition per the Joint Prototyping Plan. 96 Small Business Innovation Research/Small Business Technical Transfer (SBIR/STTR) Total 	advanced software and hardware processing the intelligence fusion capabilities. It tech base prototype capabilities into oper tation and refinement of ASAS operational rototyping Plan. Business Technical Transfer (SBIR/STTR)	rrocessing, stora s. into operational rrational prototy R/STTR)	ge, display and inpu ASAS prototypes a pes and their integr	advanced software and hardware processing, storage, display and input/output (I/O) technologies to tech nded intelligence fusion capabilities. It tech base prototype capabilities into operational ASAS prototypes and ASAS Block II development. Integration and refinement of ASAS operational prototypes and their integration into mainline ASAS Prototyping Plan. Business Technical Transfer (SBIR/STTR)	jies to tech lopment. .S
FY 1998 Planned Program: Project not funded in FY 98					
FY 1999 Planned Program: Project not funded in FY 99					
B. Project Change SummaryFY 1996FY1997 President's Budget5776Appropriated Value5937Adjustments to Appropriated Value-307FY1998 Pres Bud Request5630	FY 1997 2025 3941 3941	FY 1998 0 0 0	FY 1999 0 0 0		
Summary Change Explanation: Funding - FY 97 (+1916) funds to evaluate Integrated Battlefield Intelligence Server (IBIS) developed by DARPA for integration into the ASAS program.	egrated Battlefield Ir	ıtelligence Serve	er (IBIS) developed	l by DARPA for integrat	ion into the
C. Other Program Funding Summary: None					
D. Schedule Profile FY 1996	FY 1997 1 2 3	4	FY 1998 2 3	FY 1999 4 1 2 3	4
Expanded Tech Base Prototypes - Interface Adv Sit Assmt with ASAS Block II - Integrate HUMINT Anal Spt into ASAS	*				
	Page 2 of 4 Pages		il.	Exhibit R-2 (PE 0603745A)	æ
Project D333	uge 2 0) 11 uges				Item 52

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603745A Tactical Electronic Support Systems - Advanced Development (TIARA)	PROJECT onic Support Systems - D535 (IARA)
D. Schedule Profile	FY 1997 FY	FY 1998 FY 1999
Project D535	Page 3 of 4 Pages	
	<i>3</i> C3	Item 52



RDT&E PROGRAM ELEMENT/PRO	PROJECT C	OST B	REAKDO	COST BREAKDOWN (R-3)	3)	DATE F (February 1997	766
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603745A Tacti Advanced Deve	AND TITLE A Tactic ed Develo	วะ number and Title 0603745A Tactical Electronic St Advanced Development (TIARA)	PE NUMBER AND TITLE 0603745A Tactical Electronic Support Systems Advanced Development (TIARA)	rt Systen	ı	РРОЈЕСТ D535
A. Project Cost Breakdown Prototype Development Efforts SBIR/STTR Total	FY 1996 5630 5630	FY	FY 1997 3845 96 3941	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information: _	`							
Award or Performing Obligation Activity <u>Date</u> <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to F <u>Y 1996</u>	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Product Development Organizations JPL PWD EWA PWD Misc. Contracts SBIR/STTR Support and Management Organizations: None Test and Evaluation Organizations: None		10533	970 2940 1624 96	3941				15444 2940 1624 96
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management		10533	5630	3941				20104
Subtotal Test and Evaluation Total Project		10533	5630	3941				20104
**.								
Project D535	Pag	Page 4 of 4 Pages	SS		Exhi	bit R-3 (PE	Exhibit R-3 (PE 0603745A)	

RDT&E BUDGET ITEM JUST	EM JUS		TION SI	FIFICATION SHEET (R-2 Exhibit)	2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI	PE NUMBER AND TITLE 0603747A Sold	ππε coldier Su	PENUMBER AND TITLE 0603747A Soldier Support and Survivability	nd Surviv	ability		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	6029	6541	7557	0892	9235	8971	11576	10497	Continuing	Continuing
DC09 Unit/Organizational Equipment	2126	1289	1955	1737	2025	1989	2033	1564	Continuing	Continuing
D610 Food Advanced Development	2050	1905	2263	2569	3097	3342	3744	3761	Continuing	Continuing
D669 Clothing and Equipment	2533	3347	3339	3374	4113	3640	5799	5172	Continuing	Continuing

supports advanced development of a new generation of field service support items and shelters, including collective protection and shelter heaters for unit/organizational use to enhance the quality of life of field soldiers and the ability to project forces to spartan environments. Program element also supports advanced development of individual fabric shelters, food, food and field service equipment which will enhance soldier battlefield effectiveness, survivability, sustainment and quality of life. Program element and electronic detection and environmental hazards. The projects in this Program Element focus on efforts to demonstrate general military utility to include demonstration clothing and equipment items to lighten the soldier's load and incorporate protection against chemical and biological agents, thermal nuclear flash, ballistic threats, visual Mission Description and Budget Item Justification: Provide advanced development for unit/organizational equipment, improved individual clothing and equipment, and validation and are therefore correctly placed in Budget Activity 4.

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Exhibit R-2 (PE 0603747A)

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	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	FIFICATION SHEET (R-2 Exhibit)	HEET (F	1-2 Exhi	bit)		DATE Fe	February 1997	26
BUDGET ACTIVITY 4 - Demonstrat	DGET ACTIVITY - Demonstration and Validation			PE NI 060	PE NUMBER AND TITLE 0603747A Sold	TITLE Soldier S	PE NUMBER AND TITLE 0603747A Soldier Support and Survivability	nd Surviv	ability		PROJECT DC09
Ö	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC09 Unit/Organization	Unit/Organizational Equipment	2126	1289	1955	1737	2025	1989	2033	1564	Continuing	Continuing
A. Mission Descrip	A. Mission Description and Justification: Develop and field so	op and field s	oft shelters,	showers, lat	rines and he	aters to imp	ft shelters, showers, latrines and heaters to improve unit sustainability and combat effectiveness.	tainability a	nd combat ef	ffectiveness.	
Acquisition Strateg	Acquisition Strategy: Developments transition to Engineering and Manufacturing Development and Production.	Engineering	and Manufa	cturing Deve	elopment an	d Production	ند				
FY 1996 Accomplishments:	imments: Redesigned Ammunition Solar Covers (ASC) Tyne I to meet hoth Tyne I and Tyne II requirements to improve reliability and stability of munitions in	ar Covers (A	C) Tyne I f	o meet hoth	Tvne I and ⁷	Pyne II ream	rements to i	mprove relia	bility and st	ability of mu	nitions in
201	hot environment, completed Technical Testing / Operational Testing (TT/OT). Prototyped General Purpose Solar Cover (GPSC) and conducted TT/OT on single solution design. Prepared concept designs for user review of General Purpose Solar Cover which provides lightweight, solar	Technical Testign. Prepare	ting / Opera	tional Testin	ng (TT/OT). er review of	Prototyped General Pur	General Pur pose Solar C	pose Solar Cover which	over (GPSC provides ligh) and condu ntweight, sol	ted ar
• 465	protection that is rapidly erectable and easy to use. Performed Early User Testing, downselected best candidate, and initiated TT/OT for the Lightweight Maintenance Enclosure (LME) to improve field	table and easing, downselec	y to use. ted best can	didate, and i	nitiated TT/0	OT for the L	ightweight N	Aaintenance	Enclosure (I	LME) to imp	rove field
ć i	maintenance capability and equipment readiness.	quipment rea	diness.	Dollistic De	Caristo Care	(DDC) to	aline only	erability of	aollotizod en	nnliec	
. 259	Completed design and procured test prototypes for the Danish Crotective System (Dr.S.) to reduce vanicationity of particular suppress. Redesigned frame system and assessed seaming technologies for the Modular General Purpose Tent System (MGPTS) Preplanned Product	red test protot d assessed sea	ypes for the ming techno	Dailistic Fit Slogies for th	nective syste ne Modular (General Purp	ose Tent Sy	stem (MGP)	(S) Preplann	ppines. led Product	
	Improvement (P31) to provide dual support options and interchangeable components for increased flexibility	e dual suppor	t options an	d interchang	eable compo	ments for in	creased flexi	bility.			
• 440	Completed TI/OT on the Containerized Self-Service Laundry to increase quality of life in remote field conditions. Built prototypes and conducted TT/OT on the Space Heater Arctic (SHA) and Space Heater Small (SHS) to increase safety, reliability, and efficiency	ntainerized Sied TT/OT on	off-Service I the Space H	aundry to 11 leater Arctic	(SHA) and	ity ot iite in Space Heate	remote neld r Small (SH	conditions. S) to increas	e safety, relia	ability, and e	fficiency
Total 2126	of field heaters.										
FY 1997 Planned Program:	rogram:										
• 275	Complete development and Type Classify (TC) the Modular ASC and GPSC, prepared LRIP Plan.	ype Classify	(TC) the Mo	odular ASC	and GPSC, 1	repared LR	IP Plan.				
130	Complete development and Type Classify the LME, prepare LRIP and Production Contracts.	ype Classify	the LME, p	repare LRIP	and Product	ion Contrac	ťs.				
\$12	Complete development of the thermoelectric capability for SHS for integration into the Family of Space Heaters for improved heat distribution and	thermoelect	ic capabilit	y for SHS fo	or integration	n into the Fa	mily of Spac	e Heaters fo	r improved l	neat distribut	ion and
32	increased efficiency. Type Classify SHA and SHS and transition to production. Complete performance specification. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program	lassity SHA esearch/Smal	and SHS and Business T	nd SHS and transition to production. Complete perform Business Technology Transfer (SBIR/STTR) Program	o production Transfer (SB	i. Complete IR/STTR) Pi	perrormance rogram	specificatio	ď		
Total 1289				;			ı				
Project DC09				Page 2 of 16 Pages	16 Pages			Exhib	Exhibit R-2 (PE 0603747A))603747A)	
110/00/100/01											Item 53
				529							*** ******

RDT&E BUDGET ITEM JUST		FICATION SHEET (R-2 Exhibit)	IEET (R	-2 Exhil	bit)		DATE Feb	February 1997	7
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NO 0 00	PE NUMBER AND TITLE 0603747A Sold	⊓⊺∟E oldier Su	D TITLE Soldier Support and Survivability	nd Surviv	rability	PR D(PROJECT DC09
 FY 1998 Planned Program: 207 Complete development and TC BPS, complete performance specification and transition to production. 360 Conduct market survey of the Family of Field Latrines (FOFL). Procure prototypes of the Maturing Theater Latrine (MTL) and conduct test and evaluation. 450 Procure modified non-developmental item (NDI) candidate prototypes of the Aviation Maintenance Shelter (AMS) and conduct technical testing. 150 Conduct market survey and procure prototypes of the Initial Deployment Shower (IDS) and Water Heater and conduct concept test and evaluation. 680 Award development contract for prototype air beam technology shelter including a lightweight flooring system. 680 Award development contract for prototype air beam technology shelter including a lightweight flooring system. 108 Update market survey of commercial technologies for a Modular Deck System (MDS), prepare program documents, and build prototype. Total 1955 	complete perforn of Field Latrines item (NDI) cand rototypes of the I otype air beam te technologies for	nance specifi (FOFL). Pr idate prototy nitial Deploy chnology she	ication and tr ocure protot. pes of the Avyment Show. elter includin leck System (ransition to p ypes of the N viation Main er (IDS) and ig a lightwei, (MDS), prep	rroduction. Maturing Th tenance She Water Heat ght flooring	eater Latrinelter (AMS) er and cond system.	e (MTL) and or and conduct t uct concept te uct and build pr	conduct test a echnical testi st and evalua ototype.	nd ng. tion.
 FY 1999 Planned Program: 300 Complete test and evaluation of the FOFL and Type Classify the performance specification. 450 Conduct operational testing of the AMS and Type Classify the performance specification. 300 Procure prototypes and evaluate the IDS. 376 Complete prototype fabrication and conduct test and evaluation of the AMS P31 Shelter. 311 Update MDS prototype, initiate Development Test/Operational Test. Total 1737 	OFL and Type Clast Sand Type Clast DS. conduct test and evilopment Test/Ope	d Type Classify the performance specification. Type Classify the performance specification. Est and evaluation of the AMS P31 Shelter. Test/Operational Test.	erformance spectrum of the AMS P3	pecification. cification. I Shelter.					
B. Project Change Summary FY 1997 President's Budget Appropriated Value	EY 1996 2180 2241		F <u>Y 1997</u> 1316 1289	FY 1998 2797	FY 1999 1869	69 69			
Adjustments to Appropriated value FY 1998 BES/ Pres Bud Request	2126		1289	1955	1737	37			
C. Other Program Funding Summary EY 1996 RDTE, 0604713.DC40, Unit/Organizational Equipment	1996 FY 1997 3003 1746	FY 1998 1795	<u>FY 1999</u> 1811	FY 2000 1841	FY 2001 2026	FY 2002 2064	FY 2003 2072	To Compl Cont	Total Cost
Project DC09		Page 3 of 16 Pages 530	6 Pages			Exhib	Exhibit R-2 (PE 0603747A)	(03747A)	Item 53





RDT&E BUDGET	ITEM JUSTIFICATI	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1997	760
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603747A Soldier Suppo	ऽ⊓⊓∟E Soldier Support and Survivability		PROJECT DC09
D. Schedule Profile	FY 1996	Y 1997 3 4 1	FY 1998	FY 1999	4
Type Classify SHA and SHS Complete TT/OT of Ammunition Cover Type Classify Ammunition Solar Cover Complete TT/OT for Containerized Self- Service Laundry and Type Classify Type Classify BPS and transition into production Conduct market survey on FOFL. Conduct test and evaluation on MIDL and MTL prototypes Procure and conduct TT on AMS prototypes Conduct test and evaluation on IDS Type Classify AMS Conduct test and evaluation on AMS P3I Type Classify IDS Type Classify FOFL Type Classify FOFL					
*Milestone Complete		Page 4 of 16 Pages	Exhibit	Exhibit R-2 (PE 0603747A)	
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Perunanestration and Validation Perunanestration and Perunanestration and Perunanestration and Perunanestration and Perunanestration and Perunanestration Pe	RDI	RDT&E PROGRAM ELEMENT/P	3RAM EL	EMENT/PR	ROJECT COST BREAKDOWN (R-3)	SOST B	REAKDO	OWN (R-	3)	DATE	February 1997	266
FY 1996 FY 1997 FY 1997 FY 1997 FY 1992	BUDGET ACTIVITY 4 - Demonstra	tion and Va	lidation			PE NUMBEF 0603747	AND TITLE	r Support	and Surv	ivability		PROJECT DC09
## 1289 1989 1980	A. Project Cost Br Primary Hardware	eakdown			<u>FY 1996</u> 2126		1997 1257	FY 1998 1955	FY 1999 1737	015		
urd or Performing Project Total gation Activity Office Prior to EAC FY 1996 FY 1996 ous set to be a project of the prior to Prior to EAC FY 1996 FY 1996 ous 700 700 700 1500	SBIR/S11R Total				2126		32 1289	1955	1737			
urd or Performing Project Total gation Activity Office Prior to EAC FY 1996 FY 1996 ous	B. Budget Acquisin Performing Organi Contractor or	tion History and izations Contract	d Planning Inf	ormation								
ous 700 700 700 700 700 700 700 700 700 70	Government Performing Activity	Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
\$ 190 150	SSCOM Hunter Mfg	ent Organizatio In-House Various	ons Various				1016	732 350	807 821	711 760	Cont	3266 2631
190	Gund Assoc. Weatherhaven Hansen Weather GTS ARO	MIPR					70		30	30	Cont	130
150	TRADOC VA Med Ctr McClellan AFB Army Nat'l Guard Support and Mana	gement Organi	zations				190	95	76	98	Cont	468
Government Furnished Property: None	Test and Evaluatio TECOM/YPG SBIR/STTR	n Organization	ø,				150	80	200	150	Cont	580 32
	Government Furni	shed Property:	None									
Project DC09	Project DC09			,	Page	e 5 of 16 Pag	səi		Exh	Exhibit R-3 (PE 0603747A)	0603747A)	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BREAK	DOWN (R-	(5)	DATE F 6	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603747A Sold	Soldier Support and Survivability	t and Surv	ivability		PROJECT DC09
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1996 FY 1996 1786 190 150	6 FY 1997 6 1082 0 95 0 112 6 1289	FY 1998 1658 97 200 1955	FY 1999 1501 86 150 1737	Budget to Complete	Total Program 6027 468 612 7107
		•				
Project DC09	Page 6 of 16 Pages		Ë	Exhibit R-3 (PE 0603747A)	0603747A)	Ifom 53
	533					Item 33

	TIFICATION SHEET (R-2 Exhibit)	ION OI	ובבו (א	-Z EXUII	bit)		Fel	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NC 060	PE NUMBER AND TITLE 0603747A Soldi	тітге Soldier Su	E NUMBER AND TITLE 1603747A Soldier Support and Survivability	d Surviv	ability	ā Q	РRОЈЕСТ D610
COST (In Thousands) FY 1996 F	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D610 Food Advanced Development 2050	1905	2263	2569	3097	3342	3744		3761 Continuing Continuing	Continuing

burden and Operation & Support (O&S) costs of subsistence support for service personnel. Enhance rations by increasing quality, acceptability and variety. Develop multi-A. Mission Description and Justification: Development of Joint Service Food/Food Service Equipment to improve individual combat effectiveness and reduce logistics food service, utilize battlefield fuel and decrease fuel and water requirements. Program is reviewed and validated twice annually by the DoD Food and Nutrition Research fuel, rapidly deployable field food service equipment to support combat, humanitarian missions and operations-other-than-war. Improve equipment to enhance safety in and Engineering Board as part of the Joint Service Food Program. Conduct advanced development of improved subsistence and subsistence support items to enhance soldier effectiveness and quality of life in all four Services as part of an integrated DoD Food Research, Development, Test, Evaluation and Engineering (RDTE&E)

Acquisition Strategy: Developments transition to Engineering and Manufacturing Development and procurement.

FY 1996 Accomplishments:

- Conducted user evaluation of software developed to automate the Joint Service Recipe System to allow for timely electronic release of updated/new Completed technical and user testing of improved Air Force food service refrigeration system to provide highly mobile, efficient and reliable field 580 265
 - Developed and conducted user evaluations of high potential individual and group ration components. Transitioned components with high acceptance to fielded rations, improving ration quality and increasing available menus. Identified components and developed medical supplement for the refrigeration. Transitioned the technology data package (TDP) to procurement. 809
 - Conducted user testing of new Mobility Enhancing Rations Components (MERC) to increase readiness, ease logistical burden, and improve ration Unitized Group Ration (UGR) to increase logistical efficiency of medical field feeding. 001
- Conducted market survey and developed packaging system for Ration Snack Pack to increase acceptability of operational rations.

quality

- Completed development of Long Range Patrol Rations to minimize weight and volume and transitioned to procurement. Identified and evaluated intrapackage modifiers for new composite packaging for rations that will increase consumption and field troop quality of life. 225
 - Evaluated new shelters for Kitchen Company Level Field Feeding-Enhanced. Developed/fabricated prototype components for Mobile Kitchen Trailer-Improvement program to meet future field feeding requirements to improve system performance in all environments. 212
- 2050 Total

Project D610

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Exhibit R-2 (PE 0603747A)



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) February 1997
BUDGET ACTIVITY 4 - Demonstrat	DGET ACTIVITY - Demonstration and Validation PG03747A Soldier Support and Survivability D610
FY 1997 Planned Program: 138 Comple	ogram: Complete pilot study of electronic recipe distribution and begin transitioning of new/approved recipes to the Services using the automated Joint
• 718	Service Recipe System. Identify and conduct user testing of improvements for individual and group rations. Transition selected heat and serve ration components and Meals Beady to Est improvements increasing menu variety. Conduct user evaluation of Snack Packs and design 12 Meal Cold Weather menus. Draft
• 288 • 147	preparation manual for medical supplement for the UGR. Design four MRE ration alternatives and conduct initial studies to determine the effects of portion size and variety on acceptance/intake. Conduct user evaluations of MERC to provide eat-on-the-move capability. Procure test components for field test. Perform technical feasibility testing (TFT) on NDI waste reduction/handling equipment which will reduce the field back-haul and trash removal
• 377	requirements and transition optimum system to procurement. Initiate design and fabrication of Marine Corps Rapid Deployment Kitchen (RDK) based on centralized heating technology providing highly mobile, efficient field feeding capability.
• 47 • Total 1905	Evaluate Thermally Efficient Field Serving Equipment to optimize 100d quanty and translubil Frocurement documentation to transluce Corps for procurement. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program
FY 1998 Planned Program:	ogram: Fabricate Non-electric Field Refrigerator prototype, conduct technical user testing and transition to procurement. Complete fabrication and initiate test and evaluation of the Rapid Deployment Kitchen (RDK). Design and fabricate specific applications for a Catalytic Diesel Vaporizer (CDV) to effectively integrate with commercial off the shelf food service
• 164 • 538	equipment. Conduct demonstration/field test of Horizontal, Form, Fill, Seal (HFFS) food trays as alternatives to metal traycans. Identify and conduct user testing of improvements for individual and group ration systems to improve acceptability and enhance combat effectiveness. Transition ration pack to procurement.
• 275 • 250	Conduct user evaluation and transition medical supplement for the UGR to procurement. Update B-ration menu. Field test MERC to quantify warfighter acceptability / mobility enhancement and transition to procurement. Prepare redesigned MRE ration prototypes to minimize weight/cube/cost and conduct initial field test to determine effect on level of acceptance and
Total 2263	
Project D610	Page 8 of 16 Pages . Exhibit R-2 (PE 0603747A)

	RDT&E BUDGET ITEM JUST	M JUST		ON SH	EET (R.	FICATION SHEET (R-2 Exhibit)	oit)		DATE Feb	February 1997	7(
BUDGET ACTIVITY 4 - Demonstrat	BUDGET ACTIVITY 4 - Demonstration and Validation			PE NUN 0603	PE NUMBER AND TITLE 0603747A Sold	ਹ ਸਾਸ਼ Soldier Support and Survivability	pport an	d Surviva	ability	P. O	РRОЈЕСТ D610
FY 1999 Planned Program:	Fabricate prototype Marine Corps Expeditionary Field Feeding Delivery System Complete testing of the Catalytic Diesel Vaporizer and transition to production. Develop new system concepts for the Field Feeding Unit - Expendable. Develop new system concepts for the Field Feeding Unit - Expendable. Develop company-sized kitchen and fabricate prototype of the Mounted Kitchen, Company Level Field Feeding. Conduct market survey and evaluate prototypes of the Beverage Cooling Device (BCD) to optimize soldier hydration. Complete storage studies/demonstrations of glass coated polymeric tray with easy open lid to refine concepts, ensure high acceptability and optimize functionality and affordability. Continue to identify and conduct user testing of improvements for individual and group ration systems. Transition selected heat and serve ration components and MRE improvements, increasing menu variety. Conduct field tests in different environments to establish effectiveness of selected performance enhancing ration components (PERCs) and supplements, demonstrate overall producibility and suitability of PERCs-based rations and transition to procurement. Complete ration redesign and conduct follow-up field testing to demonstrate improved acceptance/consumption and reduced logistic burden.	s Expeditio Diesel Vapor the Field I and fabrical uate prototy strations of tuser testing tents, increa navironments I producibil nduct follow	nary Field Fiorizer and the feeding Unit feeding Unit to prototype pes of the Biglass coated glass coated sing menu vito establish ity and suital v-up field tes	eeding Deliransition to Jr. Expendal of the Moureverage Cocporation polymeric transition. The ariety. The ariety. The ariety. The ariety. The ariety. The ariety.	very System production. ole. nated Kitcher oling Device tray with east idividual and idividual and onstrate impossible.	t, Company] t, (BCD) to ol sy open lid tc d group ratio d performan ations and tr proved accep	Level Field ptimize sold orefine community or systems. The consults of the constraint of the constrain	Feeding. lier hydration cepts, ensure Transition so g ration corr procurement imption and	ary Field Feeding Delivery System brizer and transition to production. eeding Unit - Expendable. prototype of the Mounted Kitchen, Company Level Field Feeding. es of the Beverage Cooling Device (BCD) to optimize soldier hydration. lass coated polymeric tray with easy open lid to refine concepts, ensure high acceptability and optin of improvements for individual and group ration systems. Transition selected heat and serve ration ing menu variety. to establish effectiveness of selected performance enhancing ration components (PERCs) and ty and suitability of PERCs-based rations and transition to procurement. -up field testing to demonstrate improved acceptance/consumption and reduced logistic burden.	tbility and o	otimize ion
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	Summary Sudget ropriated Value		FY 1996 2103 2162 -112 2050	FY 1997 1946 1905 1905	1997 1946 1905 1905	FY 1998 2429 2263	FY 1999 2774 2569	9 <u>9</u> 74 9 <u>9</u>			
C. Other Program RDTE, 0604713.D5	C. Other Program Funding Summary: RDTE, 0604713.D548, Military Subsistence	FY 1996 802	FY 1997 792	FY 1998 884	FY 1999 1294	FY 2000 1643	FY 2001 1765	FY 2002 1877	FY 2003 1884	To Compl Cont	Total Cost Cont
System OPA 3, MA8050, Ite	System OPA 3, MA8050, Items Less Than \$2.0M (CSS-	1467	2024	1334	4131	3431	5389	15507	15280	Cont	Cont
EQ) OPA 3, MA5800, Re	EQ) OPA 3, MA5800, Refrigeration Equipment	2481	4297		1986	981	981	995	1992	Cont	Cont
Project D610				Page 9 of 16 Pages	5 Pages			Exhibil	Exhibit R-2 (PE 0603747A)	(03747A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTIFICA	TIONS	HEET (R-2 Exhibit	t)	DATE February 1997	1997
BUDGET ACTIVITY 4 - Demonstration and Validation		PE 06	PE NUMBER AND TITLE 0603747A Soldier Sup	ਹ ਜπ∟∈ Soldier Support and Survivability	/ability	РRОЈЕСТ D610
D. Schedule Profile	FY 1996	-	FY 1997	FY 1998	FY 1999	4
Conducted user tests of Mobility Enhancing Ration Components (MERC) Transition heat and serve ration and MRE improvements to procurement Complete TFT of waste handling equip Fabricate USMC field kitchen based on centralized heating technology Transition Long Range Patrol Rations (LRPR) to procurement. Complete fabrication/start testing on the RDK Complete testing of the Catalytic Diesel Vaporizer Evaluate prototypes of the Beverage Cooling Device Cooling Device Conplete Technical/User Testing of Non Electric Field Refrigerator Initiate development of Mounted Company Level Kitchen * Milestone Complete	** **	-				
Project D610		Page 10	Page 10 of 16 Pages	Exhib	Exhibit R-2 (PE 0603747A)	A)
		5	537		•	Item 53

RDT&E PROGRAM ELEMENT/PROJECT	r cost breakdown (R-3)	REAKDO	WN (R-	3)	DATE Fe	February 1997	260
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603747A Sold	AND TITLE A Soldier	r Support and		Survivability		PROJECT D610
A. Project Cost BreakdownFY 1996Primary Hardware Development2050SBIR/STTR2050Total2050	FY	1997 1858 47 1905	<u>FY 1998</u> 2263 2263	FX 1999 2569 2569			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Project Performing or Funding Obligation Activity Office Activity Vehicle Date EAC EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Product Development Organizations SSCOM In-House GTS Various Various		1424 326	1145	1326 424	1538 453	Cont	5433 1583
SSL GSA MIPR OGA Support and Management Organizations SSCOM		100	76	113	128	Cont	438
Test and Evaluation Organizations TECOM/OGA SBIR/STTR		200	236	400	450	Cont	1286
Government Furnished Property: None Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		1750 100 200 2050	1525 97 283 1905	1750 113 400 2263	1991 128 450 2569		7016 438 1333 8787
Project D610	Page 11 of 16 Pages 538	s ₂		Exh	Exhibit R-3 (PE 0603747A)	0603747A)	Item 53





	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	FION SE	TEET (F	'IFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstrat	DEET ACTIVITY - Demonstration and Validation			PE NC 060	PE NUMBER AND TITLE 0603747A Sold	TITLE Soldier Su	Soldier Support and Survivability	nd Surviv	ability		РКОЈЕСТ D669
O	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D669 Clothing and Equipment	quipment	2533	3347	3339	3374	4113	3640	5799	5172	Continuing	Continuing
A. <u>Mission Descrip</u> lethality, sustainabili	A. Mission Description and Justification Use state-of-the-art technology to develop improved clothing and individual equipment items to enhance the effectiveness, lethality, survivability and quality of life of the individual soldier.	e-of-the-art	echnology t dividual sol	o develop in dier.	nproved clo	thing and inc	dividual equi	pment items	to enhance 1	the effective	ness,
Acquisition Strateg	Acquisition Strategy: Developments transition to engineering and manufacturing development (EMD) and then to production.	engineering a	nd manufac	turing devel	opment (EN	(D) and then	ı to productic	'n.			
FY 1996 Accomplishments: • 100 Conductions	conducted market survey, updated requirements document, revised acquisition strategy for Advanced Laser Protective Systems (ALPS) [Formerly	dated require	ments docur	nent, revisec	l acquisitior	ı strategy for	. Advanced L	aser Protect	ive Systems	(ALPS) [Fo	rmerly
1304	(SPECS) Preplanned Product improvement (F31). Evaluated commercial samples and reviewed experimental models for design feasibility of the Modular Load System (MLS) (single point release mechanism) and the Rody Armor Set Individual Countermine (BASIC) P31 Boot.	Improvemen es and review mor Set Indiv	t (<i>F31)].</i> ed experime idnal Count	ntal models	for design f	easibility of	the Modular	Load Syster	n (MLS) (sii	ngle point re	lease
• 1129	Completed scoring conference, draft technical and health hazard assessment report, draft TC documents and procurement package for self-contained toxic environment protective outfit (STEPO).	e, draft techn	ical and hea	th hazard as	sessment re	port, draft T	'C documents	s and procure	ement packa	ge for self-c	ontained
Total 2533											
FY 1997 Planned Program: • 1447 Conduc	rogram: Conduct market investigation, test new materials, develop initial design concepts for Reduced Weight Explosive Ordnance Disposal (EOD) Suit and	, test new ma	terials, deve	lop initial de	sign conce	ots for Reduc	ced Weight E	xplosive Or	dnance Disp	osal (EOD)	Suit and
• 1749	Arche Canteen. Develop initial design concepts, conduct technical and early user evaluations and downselect designs/materials for test prototypes for ALPS Complete Phase II Development Test/Operational Test (DT/OT), type classify and transition to production STEPO.	ots, conduct to	chnical and rational Test	early user e	valuations a	nd downsele and transitio	ect designs/m	aterials for t ion STEPO.	est prototypa	es for ALPS	
76 Total 3347	Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program	esearch/Smal	Business T	echnology T	ransfer (SB	IR/STTR) P _i	rogram				
FY 1998 Planned Program:	rogram:										
950	Conduct early user evaluation, freeze design, fabricate test prototypes, and initiate DT/OT of the Reduced Weight EOD Suit and Arctic Canteen.	n, freeze design	n, fabricate	test prototyl	pes, and init	iate DT/OT	of the Reduc	ed Weight E	OD Suit and	i Arctic Can	een.
250	Fabricate test prototypes, conduct D1/O1, complete assessment reports, octain minerone in approvation to the Att	conduct Phas	complete as e I of DT/O	T for the Ad	vanced Con	bat Helmet	and transitio	n to EMD.	alla cranisici	anno id or mo	
245	Refine initial design concepts, conduct technical tests and early user evaluations, select materials and designs for the Concealable Body Armor, and transition to EMD.	, conduct tec	hnical tests	and early use	er evaluation	ns, select ma	terials and de	esigns for the	e Concealabl	le Body Arm	or, and
Project D669				Page 12 of 16 Pages	16 Pages			Exhib	Exhibit R-2 (PE 0603747A))603747A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUSTIFICAT	ON SHEE	T (R-2	Exhibit)		DATE Fe	February 1997	<u></u>
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AN 0603747A	PE NUMBER AND TITLE 0603747A Soldier	er Support	Support and Survivability	vability	PR O	РКОЈЕСТ D669
 FY 1998 Planned Program: (continued) 500 Conduct early user evaluation of materials and designs for an Advanced Combat Uniform and transition to EMD 1144 Conduct market surveys, test new materials, develop designs, and test in early user evaluations an Advanced Sperial missions. Total	erials and designs f	or an Advanced igns, and test ir	Combat Uni	nd designs for an Advanced Combat Uniform and transition to EMD. develop designs, and test in early user evaluations an Advanced Special Purpose Ensemble and gloves for	tion to EMD. dvanced Speci	al Purpose Er	semble and g	oves for
 FY 1999 Planned Program: 520 Complete DT/OT and assessment reports, obtain Milestone III approval, and transition the Reduced Weight EOD Suit and Arctic Canteen to production. 800 Evaluate materials, develop initial designs, and test Joint Service Modular Eye Protection System (MEPS) in an early user evaluation. 	oorts, obtain Milestc	ne III approval Service Modul	, and transitions ar Eye Prote	on the Reduced	Weight EOD S (EPS) in an ear	buit and Arcti	c Canteen to ation.	
2054 Fabricate test prototypes, conduct Phase I of DT/OT, and transition the Advanced Special Purpose Ensemble and gloves for specialized missions to EMD. Total 3374	ase I of DT/OT, and	I transition the	Advanced Sp	ecial Purpose E	nsemble and g	loves for spe	ialized missic	ns to
B. <u>Project Change Summary</u> FY 1997 President's Budget Appropriated Value	FY 1996 3415 3510	FY 1997 3418 3347	FY	FY 1998 3590	<u>FY 1999</u> 3650			
Adjustments to Appropriated Value FY 1998 Pres Bud Request	-977 2533	3347		3339	3374			·····
Change Summary Explanation: FY 96 (-882) reduction realigned		to a higher priority requirement.	ıent.					
C. Other Program Funding Summary:	FV 1006 FV 1007	EV 1008 EX	5V 1000 EV	EV 2000 EV 2001	01 EV 2002	EV 2002	To	Total
RDTE, 0604713.DL40, Clothing & Equipment OMA, 114092000, Central Funding & Fielding				- ,		4889 85848	Cont	Cont
D. Schedule Profile	FY 1996	-	FY 1997	-	FY 1998	-	FY 1999	7
Complete Phase II of DT/OT and Assessment Reports and Type Classify STEPO Develop design concept for ALPS and ACH		.	^ ×	.		- -		1
Project D669	P	Page 13 of 16 Pages	ıges		Exhib	Exhibit R-2 (PE 0603747A)	303747A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	USTIFICATI	ON SHEE	T (R-2 E	xhibi	₽			DATE	Febru	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AN 0603747A		Soldier Support and Survivability	port	and S	urvi	vabilit	<u></u>	ă O	Р ROJECT D669
D. Schedule Profile	FY 1996 1 2 3	4	FY 1997 2 3	4	_	FY 1998 2 3	98 	4	-	FY 1999 2 3	4
Develop design concepts for SPECS P3I and Advanced Combat Helment (ACH)		' *			1	I	•		1		
Conduct technical and early user evaluation for SPECS P31 and ACH			×								
Select test prototype designs for SPECS P31 and ACH SPECS P31 test items//DT and OT and reports//				×	×		×	×			
Milestone III and transition to procurement ACH test items//Phase I DT and OT and transition to						×		×			
EMD Evolunts commercial complex for MI S	**										
for feasibility	*	*									
Evaluate commercial designs and use CADCAIM for BASIC P31 Boot design											
Conduct market survey for Reduced Weight EOD Suit		*	•								
Test new materials, develop initial designs for Reduced				×							
Weight EOD Suit and Arctic Canteen Early user evaluation of the Reduced Weight EOD Suit					×		×		^	×	×
and Arctic Canteen//Test items//DT and OT and											
reports//Milestone III and transition to procurement Initial designs of the Concealable Body Armor//					×		×	×			
Technical tests and early user evaluation//Select											
Early user evaluation of materials and designs for the							×	×			
Advanced Combat Uniform//Analyze and transition to EMD											
Market survey of an Advanced Special Purpose					×	×		×	^	×	×
Ensemble and special mission gloves//Material											
prototypes//Phase I DT and OT and transition to											
EMD											
Project D669	Pc	Page 14 of 16 Pages	ages				Exhib	it R-2 (Exhibit R-2 (PE 0603747A)	3747A)	
		541									Item 53

RDT&E BUDGET ITEM JUST	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1997	56
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603747A Soldier Support and Survivability		PROJECT D669
D. Schedule Profile	FY 1996 FY 1998 FY 1998	-	7
Initial materials and designs for the Joint Service Modular Eye Protection System//Early user evaluation		· ×	· ×
* Completed Milestone			
Project D669	Page 15 of 16 Pages	Exhibit R-2 (PE 0603747A)	
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BREAK	DOWN (R-3		DATE February 1997	1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603747A Soldi	D TITLE Soldier Support and Survivability	and Surviv	rability	РRОЈЕСТ D669
A. Project Cost Breakdown Clothing and Equipment SBIR/STTR	FY	<u>FY 1998</u> 3339	FY 1999 3374		
	2533 3347	3339	3374		
B. Budget Acquisition History and Planning Information: Not applicable					
Project D669	Page 16 of 16 Pages		Exhib	Exhibit R-3 (PE 0603747A)	
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	2 Exhi	bit)		DATE Fel	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI	0603766A Tacti	ਸਸ∟E 'actical E /∓ENCA	xploitati	5003766A Tactical Exploitation of National	tional	d ப	Р ROJECT D907
			Ca	papilities	(IENCA	г) - рет	capabilities (TENCAP) - Demival (TIARA)	KA)		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost

Continuing

Continuing

31095

30920

29020

24751

23714

20920

25354

26796

Tactical Exploitation of National Capabilities - Adv Dev

D907

Element (PE) focuses on efforts associated with advanced technology development used to demonstrate general military utility to include demonstration and validation in the Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple A. Mission Description and Budget Item Justification: Supports the tactical commander's intelligence requirements for contingency force development and deep battle targeting as stated in Field Manual 100-5. Specific developments are managed within the Army's Tactical Exploitation of National Capabilities (TENCAP) program. The Tactical Radar Correlator (ETRAC)] into an integrated common baseline; downsized modular and scaleable to meet a wide range of contingency requirements. TENCAP provided in the Tactical Intelligence and Related Activities (TIARA) Congressional Justification Book, Volume II, and in the Army TENCAP Master Plan. This Program (CIGSS) program. TES brings all of the existing and emerging Army TENCAP capabilities [AEPDS, Modernized Imagery Exploitation System (MIES), and Enhanced scope of the program is to leverage specific data and capabilities available from existing and emerging national and selected theater capabilities that meet stated Army tactical intelligence information and targeting needs. This project supports the advanced development/enhancement of the Electronic Tactical User Terminal (ETUT), Mobile Integrated Tactical Terminal (MITT), Forward Area Support Terminal (FAST), Tactical Exploitation System (TES), and Advanced Electronic Processing and Dissemination System (AEPDS). The Army's emerging TES will incorporate the standards and protocols dictated by the Common Imagery Ground Surface System TENCAP systems, including MIES and ETRAC that are funded under the Defense Airborne Reconnaissance Program (DARP) (PE 0305154D). Specific details are area of TENCAP and is correctly placed in Budget Activity 4. Acquisition Strategy: The Army Space Program Office (ASPO) strives for an acquisition environment emphasizing stable funding, low density acquisition, minimal use of software, ASPO minimizes risk while maximizing efficiency. Strong user involvement, a robust operations and maintenance program and a vigorous technology insertion MILSPECS, and managed competition. By tailoring existing technology, leveraging the best commercial practices, and using commercial and government off the shelf effort ensure programmatic success. Finally, dedicated cradle to grave Integrated Logistics Support (ILS) for TENCAP systems is accomplished through a coordinated effort by government and contractor personnel and facilities.

FY 1996 Accomplishments:

- worldwide contingency scenarios such as upgrades to Communication System Processor (CSP) to incorporate Tactical Packet Network (TPN) and Defense Switched Network (DSN) connectivity, the Demand Assigned Multiple Access (DAMA) appliqué to SUCCESS radios and support to the Continued to pursue technology for the refinement of the TENCAP Common Baseline for fully exploiting national capabilities to meet emerging Joint Collection Management Tool (JCMT).
- Initiated design concept and prototype development of Tactical Exploitation Systems (TES) with state-of-the-art hardware and software. 5596

Project D907

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Exhibit R-2 (PE 0603766A)





	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 4 - Demonst	вир бет АСТИЛТУ 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603766A Tactical Exploitation of Nationa Capabilities (TENCAP) - Dem/Val (TIARA)	PROJECT ational D907 ARA)
FY 1996 Acco	 FY 1996 Accomplishments: (continued) 2434 Completed advanced development effort to retrofit ETUTs with enhanced MITT hardware and software. 5120 Continued support to TENCAP program management with administrative activities [e.g., FFRDC (Aeros support (SETA), and Topographic Engineering Center (TEC)]. 3096 Continued support to efforts being developed under PE 0305154D (DARP) Project P531 (e.g., FFRDC (Total 26796) 	Inments: (continued) Completed advanced development effort to retrofit ETUTs with enhanced MITT hardware and software. Continued support to TENCAP program management with administrative activities [e.g., FFRDC (Aerospace), ASPO, systems engineering technical support (SETA), and Topographic Engineering Center (TEC)]. Continued support to efforts being developed under PE 0305154D (DARP) Project P531 (e.g., FFRDC (Aerospace), ASPO, SETA, and TEC).	SPO, systems engineering technical ce), ASPO, SETA, and TEC).
FY 1997 Planned Program:	 8082 Continue to pursue technology for the refinement of the TENCAP common baseline for fu worldwide contingency scenarios 10027 Initiate advanced development efforts for ground processing technologies for new national 5077 Continue support to TENCAP program management with administrative activities (e.g., Floor 1579 Continue support to efforts being developed under PE 0305154D (DARP) Project P531 (e.g., Floor Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) 	ogram: Continue to pursue technology for the refinement of the TENCAP common baseline for fully exploiting national capabilities to meet emerging worldwide contingency scenarios Initiate advanced development efforts for ground processing technologies for new national sensors capabilities that will be incorporated into TES Continue support to TENCAP program management with administrative activities (e.g., FFRDC (Aerospace), ASPO, SETA, and TEC). Continue support to efforts being developed under PE 0305154D (DARP) Project P531 (e.g., FFRDC (Aerospace), ASPO, SETA, and TEC). Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR)	capabilities to meet emerging at will be incorporated into TES PO, SETA, and TEC).
FY 1998 Planned Program:	 5327 Continue to pursue technology for the refinement of the TENCAP common baseli worldwide contingency scenarios. In addition to staying current with national and Network (DSN) and Defense Message System (DMS) into the TENCAP systems. 8775 Continue advanced development of TES Program 4432 Continue support to TENCAP program management with administrative activities 2386 Continue support to efforts being developed under PE 0305154D (DARP) Projec 	Oortinue to pursue technology for the refinement of the TENCAP common baseline for fully exploiting national capabilities to meet emerging worldwide contingency scenarios. In addition to staying current with national and theater capabilities, will include integration of Defense Switched Network (DSN) and Defense Message System (DMS) into the TENCAP systems. Continue advanced development of TES Program Continue advanced development of TES Program management with administrative activities (e.g., FFRDC (Aerospace), ASPO, SETA, and TEC). Continue support to efforts being developed under PE 0305154D (DARP) Project P531 (e.g., FFRDC (Aerospace), ASPO, SETA, and TEC).	capabilities to meet emerging le integration of Defense Switched PO, SETA, and TEC).
FY 1999 Planned Program:	 S802 Continue to pursue technology for the refinement of the TENCAP common basel worldwide contingency scenarios. In addition to staying current with National and Network (DSN) and Defense Message System (DMS) into the TENCAP systems 9849 Continue advanced development of TES Program. 5258 Continue support to TENCAP program management with administrative activitie 2805 Continue support to efforts being developed under PE 0305154D (DARP) Project 23714 	ine for fully exploiting natio d Theater Capabilities, will i s (e.g., FFRDC (Aerospace) rt P531 (e.g., FFRDC (Aeros	nal capabilities to meet emerging nclude integration of Defense Switched, ASPO, SETA, and TEC). space), ASPO, SETA, and TEC).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	HS NOI	EET (R	-2 Exhit	oit)		DATE Feb	February 1997	71
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060;	PE NUMBER AND TITLE 0603766A Tacti Capabilities (TE	пге actical Ey (TENCAF	PE NUMBER AND TITLE 0603766A Tactical Exploitation of National Capabilities (TENCAP) - Dem/Val (TIARA)	n of Nat ⁄al (TIAF	ional RA)	PR DS	РРОЈЕСТ D907
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value		FY 1996 27460 27738 -942		EY 1997 26060 25354	EY 1998 23200	FY 1999 27094	9.4			
FY 1998 BES/Pres Bud Request 20920 23.14 Change Summary Explanation: Funding - FY 98 & FY 99 reductions are for Spares Pricing Adjustment, T&E Streamlining and civilian salary reduction as result of HQDA redesign. (FY 98 -2280/FY 99 -3380).	26/96 FY 98 & FY 99 reductions are for Sp redesign. (FY 98 -2280/FY 99 -3380)	26/96 ns are for Sp (Y 99 -3380),	oares Pricing).	25554 ng Adjustment	20920 , T&E Strea	23714 mlining and ci	4 civilian sak	ary reduction	as result of E	ІО́ДА
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Compl	Total Cost
RDTE, A Budget Activity 5 PE 64766.D909 TENCAP	23266	15235	19113	19531	26094	25097	28203	28359	Cont	Cont
RD 1E, D Budget Activity / PE 0305154D DARP PE 0305208D DARP	41526	50287	0 30433	0 28175	0 22214	0 24108	0 23583	0 23179	Cont	Cont
Other Procurement Army, OPA-2 BZ 7315 TENCAP	4473	1756	1679	1728	4598	13703	14779	16822	Cont	Cont
Procurement, Defense Wide PE 0305154D DARP PE 0305208D DARP	80822	89945	0 94070	0 81600	0 80576	0 71867	0 73926	0 75239	Cont	Cont
D. Schedule Profile	FY 1996 2 3	4	F)	FY 1997 2 3	4	FY 1998 2 3	8 £	1 7	FY 1999 2 3	4
Initiate Prototype Development for TES Complete Adv Dev of DAMA Appliqué into TENCAP Common Baseline SUCCESS Radios Initiate Integration of DSN/DMS into	*		×			×				
LENCAP Systems Complete Prototype Development TES Forward										×
Project D907			Page 3 of 5 Pages	Pages			Exhibi	Exhibit R-2 (PE 0603766A)	03766A)	
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Per Number And Title 4 - Demonstration and Validation Of National 4 - Demonstration and Validation Of State Table Table Table 5 - Demonstration and Validation Of State Table Table Table 5 - Demonstration and Validation Demonstration of National 5 - Demonstration of DSN/DMS into 1 2 3 4 1 2 3 4 1 2 3 3 4 1 3 3 3 3	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997
PAGE 4 of 5 Pages	ВUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603766A Tactical Exploitation c Capabilities (TENCAP) - Dem/Val	
DMS into 1 2 3 4 1 2 5 4 1 2 5 5 1 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5	FY 1996	FY 1997 FY 1998	-
Page 4 of 5 Pages	ion of DSN/DMS into	2 1 4 2	o ×
Page 4 of 5 Pages	*Denotes completed milestone		
Page 4 of 5 Pages			
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BREAK	DOWN (R-3	DATE	February 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603766A Tactical Exploitation of Nation Capabilities (TENCAP) - Dem/Val (TIARA)	tical Exploita ENCAP) - Der	PE NUMBER AND TITLE 0603766A Tactical Exploitation of National Capabilities (TENCAP) - Dem/Val (TIARA)	PROJECT D907
A. Project Cost Breakdown FY 1996 Common Baseline (*1) 10550 TES 5596 ETUT 2434 ASPO In-House (*2, *3) 2507 FFRDC 219 System Engineering (Contractor) (*2) 4115 System Engineering (Government) (*2) 1375 SBIR/STTR 26796	6 EY 1997 10 8082 10027 14 0 17 2135 19 87 1200 15 1200 16 25354	EY 1998 5327 8775 1995 97 3692 1034	FY 1999 5802 9849 1871 106 5051 1035	

^(*1) TENCAP Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple TENCAP systems [including MIES and ETRAC that are funded under the DARP (PE 0305154D)].

B. Budget Acquisition History and Planning Information: Not Applicable

UNCLASSIFIED

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Project D907

Exhibit R-3 (PE 0603766A)

^(*2) Approximately 40% of program management cost in FY 1996 through FY 1999 support efforts being developed under PE 0305154D.P531. (*3) The ASPO In-House support in this project also supports efforts being developed under PE 0604766A.D909.



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SE	HEET (R	-2 Exhi	bit)		DATE Feb	February 1997	197
BUDGE 4 - D(BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 000	PE NUMBER AND TITLE 0603774A Nigh	ritle light Visi	PENUMBER AND TITLE 0603774A Night Vision Systems - Advanced	ms - Adv	ranced		
				De.	Development	اي					
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
,	Total Program Element (PE) Cost	3167	2769	2939	2893	3298	4703	6003	6024	Continuing	Continuing Continuing
D131	D131 Night Vision Systems Advanced Development	3167	2769	2939	2893	3298	4193	5150	5172	Continuing	Continuing
D598	D598 LTASS*	0	0	0	0	0	510	853	852	Continuing	Continuing

*Erroneously placed in this PE, should be 0604716A. Title of project will change to Hi-Volume Map Production Equipment during the next budget submit.

Mission Description and Budget Item Justification: This program element encompasses the advanced development phase of the Army Acquisition cycle for Night Vision acquisition and engagement of enemy targets at maximum weapon system ranges under degraded battlefield/weather conditions and in countermeasure environments. The and Electro-Optic (NVEO) devices/systems and prepares them for engineering development. The key objective of this program is to provide NVEO devices/systems for efforts are centered around development of countermeasure and electro-optic sensors for the individual soldiers and combat vehicles to meet stated Army deficiencies. topographic engineer companies. The focus of theses efforts is on advanced technology development; therefore, this project is properly placed in Budget Activity 4. LTASS program provides for market value analysis and development of high volume cartographic reproduction for table of organization and equipment (TOE) field

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Exhibit R-2 (PE 0603774A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUSTIFICA	TION SH	HEET (R	-2 Exhi	bit)		DATE Fe	February 1997	266
BUDGET ACTIVITY		PE N	PE NUMBER AND TITLE	ITLE					PROJECT
4 - Demonstration and Validation		090	3774A N	light Visi	0603774A Night Vision Systems - Advanced	ms - Ad∖	ranced	_	D131
		De	Development	ıt					

Continuing Total Cost provides the mechanism to transition tech base programs for electro-optical sensors to the engineering manufacturing development (EMD) phase of the acquisition cycle. centered around development of countermeasure and electro-optic sensors for the individual soldiers and combat vehicles to meet stated Army deficiencies. This project A. Mission Description and Justification. This project encompasses the advanced development phase of the Army acquisition cycle for Night Vision and Electro-Optic (NVEO) devices/systems and prepares them for engineering development. The key objective of this program is to provide NVEO devices/systems for acquisition and engagement of enemy targets at maximum weapon system ranges under degraded battlefield/weather conditions and in countermeasure environments. The efforts are This project provides the funding necessary to institute advances for product improvement or horizontal technology integration (HTI) to upgrade current capabilities. Continuing Cost to Complete FY 2003 Estimate 5150 FY 2002 Estimate 4193 FY 2001 Estimate 3298 FY 2000 Estimate 2893 FY 1999 Estimate 2939 FY 1998 Estimate 2769 FY 1997 Estimate 3167 FY 1996 Actual D131 Night Vision Systems Advanced Development COST (In Thousands)

Acquisition Strategy: The Long Range Advanced Scout Surveillance System and the Advanced Second Generation FLIR both utilize development contracts that were competitively awarded using best value source selection procedures.

FY 1996 Accomplishments:

		r HTI B kit
	Continued supp	67 Continued Advanced Second Generation FLIR (SGF) improvements (i.e. Standard Advanced Dewar Assembly) for HTI B kit
•	550	176
	•	•

Developed alternative approaches to Long Range Advanced Scout Surveillance System (LRAS3) to support system EMD in FY 97.

Total 3167

FY 1997 Planned Program:

- Complete support for Stingray participation in exercises and final system disposition.
 - 900 Commence Advanced Aviation SGF HTI B Kit trade studies.
- Develop Advanced SGF B kit features (e.g., frame integration and laser protection) for M2A3, M1A2 and LRAS3. 507
- Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Programs

otal 27

FY 1998 Planned Program:

- 1876 Complete Aviation B kit trade studies.
- 429 Demonstrate sight level ground B kit advanced capabilities.
 - 634 Demonstrate advanced aviation SADA detector capability

Otal 2939

Project D13

650

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Exhibit R-2 (PE 0603774A)



RDT&E BUDGET ITEM JUS		TIFICATION SHEET (R-2 Exhibit)	ION SH	IEET (R	-2 Exhil	bit)		DATE Fe l	February 1997	997
BUDGET ACTIVITY 4 - Demonstration and Validation	·		PE NU 060 ; Dev	PE NUMBER AND TITLE 0603774A Nigh Development	^{गमत} ight Visi	PE NUMBER AND TITLE 0603774A Night Vision Systems - Advanced Development	ms - Adv	anced	1	Р R ОЈЕСТ D131
 FY 1999 Planned Program: 1021 Demonstrate sight level ground B kit advanced capabilities into M2A3, M1A2, and LRAS3 1632 Develop ATR/ATC capability and interface with Aviation/Ground B kit. 240 Demonstrate Aviation B Kit Advanced capabilities. Total 2893 	nd B kit advar y and interface Advanced cap	iced capabili s with Aviati abilities.	ities into M2 ion/Ground l	A3, M1A2, B kit.	and LRAS3					
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 2879 2908	FY	<u>FY 1997</u> 2829 2769	FY 1998 3151	<u>FY 1999</u> 3110	60			
Adjustifients to Appropriated value FY 1998 Pres Bud Request		3167		2769	2939	2893	50			
C. Other Program Funding Summary PE 0602709A/Night Vision and Electro-Optical	FY 1996 16442	FY 1997 16636	FY 1998 17304	FY 1999 19213	FY 2000 19183	FY 2001 19872	FY 2002 20287	FY 2003 20744	To <u>Compl</u> Continue	Total Cost Continue
PE 0603710A/Night Vision Advanced	31142	29761	19299	19250	37651	33487	33135	29516	Continue	Continue
Development RDTE, A Budget Activity 4 PE 0604710A/Night Vision Devices Engineering Development RDTE, A Budget Activity 5	37658	34870	33456	21255	21817	18692	27214	17414	Continue	Continue
D. Schedule Profile Implement system participation in AWEs Conclude participation in AWEs	FY 1996 2 3	4 *X	FY 1 2	FY 1997 2 3 X	4	FY 1998 2 3	8 8 4	-	FY 1999 2 3	4
Award Advanced Ground B kit features Demonstrate Ground B Kit Advance Capabilities (Test) Demonstrate integration of Ground B Kit Advanced capabilities on vehicles (Test)			×				×			×
Project D131			Page 3 of 5 Pages	Pages			Exhibil	Exhibit R-2 (PE 0603774A)	(603774A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	T ITEM JUSTIF	FICATIO	N SHEET (R-2	Exhibit		DATE	TE February	ary 1997	
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NUMBER AND TITLE 0603774A Night Vision Systems - Advanced Development	LE Iht Vision	Systems	- Advar	peou	PROJECT D131	<u>г</u>
D. Schedule Profile	FY 1996		FY 1997	-	FY 1998	4	FY 1 2	7 1999 3 4	
Develop ATR/ATC capability/interface with Aviation and Ground B Kit Award Aviation trade study contract(s) Finalize Aviation B kit trade study Demonstrate Advanced Aviation SADA Detection capability (Test) Demonstrate Aviation Advanced capabilities (Test)		•	· ×	•		· ×		· × ×	
*Milestone Completed									
Project D131		Pa	Page 4 of 5 Pages			Exhibit R	Exhibit R-2 (PE 0603774A)];
			552					Itel	Item 55



RDT&E PROGRAM ELEMENT/PROJEC	PROJECT COST BREAKDOWN (R-3)	DOWN (R-3	DATE	February 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603774A Nigh Development	E ht Vision Sys	PE NUMBER AND TITLE 0603774A Night Vision Systems - Advanced Development	Р В В В В В В В В В В В В В В В В В В В
A. Project Cost Breakdown Primary Hardware Development Contractor Engineering / Trade Studies Government Engineering Support Travel Miscellaneous	1996 FY 1997 2336 1250 0 900 225 212 45 40 86 29	FY 1998 432 1626 225 40	FY 1999 1433 0 225 40 37	
Fest & Evaluation	(4	583	1158 2893	
B. Budget Acquisition History and Planning Information: Not applicable plane of the properties of the properties of the propert D131	Page 5 of 5 Pages		Exhibit R-3 (PE 0603774A)	E 0603774A)
	!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!			Item 55

RDT&E BUDGET ITEM JUS	EM JUS		TION SI	HEET (R	IFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 090	PE NUMBER AND TITLE 0603790A NAT	E NUMBER AND TITLE 0603790A NATO Research & Development	search &	Develop	ment	<u>Б</u>	экојест D691
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D691 NATO Research and Development	0	9755	13168	11169	11260	11846	12032	12246	12246 Continuing Continuing	Continuing

Development (R&D) Projects: Allied Countries. The objective is to improve, through the application of emerging technologies, the conventional defense capabilities of the sharing arrangements, management, contracting, security, data protection and third party transfers. By technology sharing the program jointly develops equipment with our States at U.S. Government and U.S. contractor's facilities. This program focuses on international cooperative technology demonstration, validation, and interoperability of electronic countermeasures, eyesafe laser radar, artillery command and control, standoff chemical detectors, kinetic energy penetrators, signal jamming subsystems, and is allies to improve operational efforts by achieving multi-national force compatibility through the use of similar equipment and improved interfaces. Funds support all the R&D costs including the identification of cooperative opportunities and administration of the program. All funds are used to pay for the U.S. work share in the United the Battlefield Combat Identification System, Force XXI Battle Command Brigade & Below (FBCB2)/Appliqué Systems, Adaptive Digital Beamforming for THAAD A. Mission Description and Budget Item Justification: This program implements the provisions of Title 10 U.S. Code, Section 2350a, Cooperative Research and cooperative R&D project spent in the U.S. Projects are implemented with the allied partners through international agreements which define the scope, cost and work radars, helicopter helmet mounted displays, military network switching, PATRIOT Tactical Operations Center, improved combat vehicle propulsion, missile seeker United States, the North Atlantic Treaty Organization (NATO), and U.S. major non-NATO allies. This program element only funds the U.S. equitable share of the therefore correctly placed in Budget Activity 4. The final program will be reported separately as required by 10 USC 2350a(f).

FY 1996 Accomplishments: This effort funded in OSD PE 0603790D Project P790.

FY 1997 Planned Program:

•	2877	2877 Combat Identification (CI) Interoperability Demonstration (Partners: France, Germany, United Kingdom): Integrate the Battlefield Combat
		Identification System (BCIS) on armored vehicles, complete interoperability trials with FR, GE, and UK prototype systems in Munster, GE.
•	2005	Battlefield Command and Control (C2) Systems Interoperability (Partner: Germany): Implement, test and evaluate message exchange through
		the Intelligent Translation Gateway, over the Defense Simulation Internet and the Digital Interface Lab in a simulated Operational Environment.
•	1500	Adaptive Beamforming Technology (ABFT) for Wide Band Phased Array Radars (Partner: United Kingdom): Improve detection in severe
		Electronic CM environments. Extend narrowband ABFT techniques to THAAD radar, develop ABFT architectures and assess design trade-offs.
•	1200	Covert Night/Day Operations in Rotorcraft (CONDOR) (Partner: United Kingdom): Improve helicopter helmet mount display and flight
		controls. Fabricate Advanced Visionics System (AVS) and Advanced Flight Control System (AFCS) prototypes, system integration and flight tests.
•	405	High Technology Switch (Partner: France): Develop advanced interoperable Asynchronous Transfer Mode (ATM) switches for ATM
		communications field tests, military networks and test beds, Digital Interoperability Lab (DIL) and Battlefield Information Transition System(BITS).
•	385	Extended Air Defense (AD) Command and Control Interoperability (Partner: Germany): Develop system specification to achieve
		interoperability between US and GE air defense tactical operations centers. Analyze interoperability elements and prepare pre-design specifications.

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Project D691

Exhibit R-2 (PE 0603790A)



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 4 - Demonstrat	BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603790A NATO Research & Development	PROJECT De91
FY 1997 Planned I • 1050	 FY 1997 Planned Program: (continued) 1050 Fighting Vehicle Propulsion Technology Using Ceramic Materials (Partner: Japan): Develop, test and characterize advance materials, inclease a ceramics, high temperature combustion optimization, low heat rejection technology, and advanced friction and wear phenomena that provides a 	Using Ceramic Materials (Partner: Japan): Develop, test and characterize advance materials, including mization, low heat rejection technology, and advanced friction and wear phenomena that provides a	terize advance materials, including nr phenomena that provides a
• 95	breakthrough in fighting vehicle diesel engine designs. The objective is to double combat propulsion system power density and fuel economy. Report to Congress: Pursuant to 10 USC 2350a, prepare and provide to USD(A&T) the Army section of the 1997 Report to Congress on the International Congressian Designation of the 1997 Report to Congress on the	e objective is to double combat propulsion system powerd provide to USD(A&T) the Army section of the 1997	r density and fuel economy. Report to Congress on the
• 238 Total 9755	International Cooperative Research and Development FrogressBIR/STTR		
FY 1998 Planned Program: • 2791 Battle	ogram: Battlefield Command and Control (C2) Systems Interoperability (Partner: Germany): Continue to test and evaluate message exchange through the Intelligent Translation Extension Extension Extension Internation Interna	erability (Partner: Germany): Continue to test and eveloping International the Digital Interface I shing simulat	valuate message exchange through
• 816	Adaptive Beamforming Technology (ABFT) for Wide Band Phased Array Radars (Partner: United Kingdom): Continue improvement of detection in severe Electronic CM environments. Define ABFT technology insertion program for THAAD Radar objective system, to include beamforming and required bardware and software modifications. Dishlish final point design	and Phased Array Radars (Partner: United Kingdon BFT technology insertion program for THAAD Radar of	or Operational Environment. a): Continue improvement of objective system, to include
• 1428	Dealmonning argonnins and required natuwate and software incurrences. Further than point design. Covert Night/Day Operations in Rotorcraft (CONDOR) (Partner: United Kingdom): Continue to improve helicopter helmet mount display and flight controls. Fabricate Advanced Visionics System (AVS) and Advanced Flight Control System (AFCS) prototypes, system integration and tests.	Te incurrentoris, ructisit mua point uestgir. (Partner: United Kingdom): Continue to improve he shand Advanced Flight Control System (AFCS) prototy.	licopter helmet mount display and mes, system integration and tests.
• 565	High Technology Switch (Partner: France): Continue development of advance interoperable Asynchronous Transfer Mode (ATM) switches for ATM communication field tests. military networks and test beds. Digital Interoperability Lab (DIL) and Battlefield Info Transition System (BITS).	velopment of advance interoperable Asynchronous Tra beds. Digital Interoperability Lab (DIL) and Battlefield	nsfer Mode (ATM) switches for Info Transition System (BITS).
99 •	Extended Air Defense (AD) Command and Control Interoperability (Partner: Germany): Continue the development of system specification to achieve interonerability between US and GE air defense tactical operations centers. Analyze interoperability elements and prepare final specification.	roperability (Partner: Germany): Continue the devel tical operations centers. Analyze interoperability element	opment of system specification to this and prepare final specification.
• 2500	Fighting Vehicle Propulsion Technology using Ceramic Materials (Partner: Japan): Continue to develop, test and characterize advance materials including committee high temperature combustion entimization low heat rejection technology, and advanced friction and wear phenomena	Materials (Partner: Japan): Continue to develop, test ion low heat rejection technology, and advanced friction	and characterize advance materials
1020	Including cerannes, figh compensation optimization, fow near rejection reminiously, and advanced including and wear prediction and seekers. Focal Plane Array Countermeasures (FPACM) (Partner: United Kingdom): Characterize and assess advanced focal plane array missile seekers and develop electronic countermeasures (FCM) to defeat them through cimulation and let testing.	: United Kingdom): Characterize and assess advanced on through cimulation modeling and lab testing	in and wear phenomena. I focal plane array missile seekers
• 1020	and develop electronic councilities (ECM) to deteat ment incogn sinutation, inorching and desting. Cooperative Eyesafe Laser Project (CELRAP) (Partner: Japan): Develop a joint performance specification for a multifunctional eyesafe laser radar for range finding target unofiling obstacle avoidance range and terrain manning. Start braschoard design and subsystem development.	can tanough summation, inouching and factoring. Japan): Develop a joint performance specification for range and terrain manning. Start braceboard design an	r a multifunctional eyesafe laser
• 642	Artillery System Cooperation Activities (ASCA) (Partners: France, Germany, United Kingdom): Develop common interface requirements for Allied Field Artillery Command and Control Systems and conduct a field demonstration for interoperability between AFATDS and Allies' systems.	or ange and refrain mapping. Start transpoored westgiven rs: France, Germany, United Kingdom): Develop conduct a field demonstration for interoperability between	or subsystem development. ommon interface requirements for the AFATDS and Allies' systems.
• 510	Laser Standoff Chemical Detector (LSCD) (Partner: France): Develop detection technology for incorporation in a lightweight, vehicle mountable contamination monitoring system that can detect and quantify in a standoff mode all known types of chemical agent contamination	nnce): Develop detection technology for incorporation is standoff mode all known tynes of chemical agen	n a lightweight, vehicle mountable
• 510	Advanced Penetrator Development In Tank Munitions (Partner: United Kingdom): Develop an advanced kinetic energy penetrator to defeat upgraded tanks being equipped with Kinetic Energy/Explosively Reactive Armor (KE/ERA). Evaluate technologies and determine design capability.	Partner: United Kingdom): Develop an advanced kin ively Reactive Armor (KE/ERA). Evaluate technologie	etic energy penetrator to defeat
Project D691	Pag	Page 2 of 11 Pages	Exhibit R-2 (PE 0603790A)
			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \

	RDT&E BUDGET ITEM JUSTIFICATIO	IIFICATION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 4 - Demonstra	вироет астіуту 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603790A NATO Research & Development	PROJECT DE91
FY 1998 Planned 335	FY 1998 Planned Program: (continued) 335 Short Range Surface-to-Air Missile Guidance Technology (ROKSAM) (Partner: South Korea): Develop dual mode lock-on-after-launch	y (ROKSAM) (Partner: South Korea): Develop du	ıl mode lock-on-after-launch
305	guidance concepts, and test the concepts using existing seekers through hardware-in-the-loop simulations. Low Level Air Picture Interface (LLAPI) (Partners: Canada, Germany, France, Netherlands, United Kingdom): Develop automated interfaces between US and Allied short range air defenses for radar data exchange and demonstrate systems interoperability.	ng existing seekers through hardware-in-the-loop simulations. (Partners: Canada, Germany, France, Netherlands, United Kingd see for radar data exchange and demonstrate systems interoperability.	om): Develop automated interfaces
• 355	TACJAM-A Electronic Support Subsystem Upgrades (Partner: United Kingdom): Develop and integrate technology enhancements to current iamming subsystems used on vehicles and aircraft that detect modern signal transmissions.	"artner: United Kingdom): Develop and integrate tech modern signal transmissions.	nology enhancements to current
205	Next- Generation Autonomous Vehicle Navigation Control System (AUTOVAV) (Partner: Germany): Initiate design and development of an advanced autonomous vehicle navigation control system. Complete sub-system tests of obstacle detection, classification, and avoidance technologies.	rol System (AUTOVAV) (Partner: Germany): Initia	ie design and development of an cation, and avoidance technologies.
100	Report To Congress: Pursuant to 10 USC 2350a, prepare and provide to USD(A&T) the Army section of the 1997 Report to Congress on the International Congressive Research and Develonment Program	and provide to USD(A&T) the Army section of the 199	7 Report to Congress on the
Total 13168			
FY 1999 Planned Program:	rogram:		
• 2542	Battlefield Command and Control (C2) Systems Interoperability (Partner: Germany): Continue to test and evaluate message exchange through the Intelligent Translation Gateway, over the Defense Simulation Internet and the Digital Interface Lab in a simulated Operational Environment.	erability (Partner: Germany): Continue to test and e lation Internet and the Digital Interface Lab in a simula	valuate message exchange through ted Operational Environment.
• 1830	Fighting Vehicle Propulsion Technology using Ceramic	ising Ceramic Materials (Partner: Japan): Continue to develop, test and characterize advance materials	t and characterize advance materials
• 1020	Focal Plane Array Countermeasures (FPACM) (Partner: United Kingdom): Characterize and assess advanced focal plane array missile seekers	out, now near rejection technology, and advanced mixen: United Kingdom): Characterize and assess advanced	I focal plane array missile seekers
1020	and develop electronic countermeasures (ECM) to deteat them through simulation, modeling and lab testing. Cooperative Eyesafe Laser Project (CELRAP) (Partner: Japan): Continue to develop a joint performance.	(M) to deteat them through simulation, modeling and lab testing.(Partner: Japan): Continue to develop a joint performance specification for a multifunctional,	cification for a multifunctional,
• 1015	eyesafe laser radar for range finding, target profiling, obstacle avoidance, range and terrain mapping. Fabricate subsystems and brassboard. Next- Generation Autonomous Vehicle Navigation Control System (AUTOVAV) (Partner: Germany): Initiate design and development of an	ele avoidance, range and terrain mapping. Fabricate su rol System (AUTOVAV) (Partner: Germany): Initia	osystems and brassboard. c design and development of an
• 1015	advanced autonomous vehicle navigation control system. Complete sub-system tests of obstacle detection, classification, and avoidance technologies. TACJAM-A Electronic Support Subsystem Upgrades (Partner: United Kingdom): Develop and integrate technology enhancements to current	complete sub-system tests of obstacle detection, classiff artner: United Kingdom): Develop and integrate tec	cation, and avoidance technologies.
• 845	jamming subsystems used on vehicles and aircraft that detect modern signal transmissions. Artillery System Cooperation Activities (ASCA) (Partners: France, Germany, United Kingdom): Develop common interface requirements for	ct modern signal transmissions. .rs: France, Germany, United Kingdom): Develop cc	mmon interface requirements for
510	Allied Field Artillery Command and Control Systems and conduct a field demonstration for interoperability between AFATDS and Allies' systems. Laser Stand-off Chemical Detector (LSCD) (Partner: France): Develop technology that will allow U.S. troops to detect, identify, and quantify	onduct a field demonstration for interoperability betwe ance): Develop technology that will allow U.S. troops	en AFATDS and Allies' systems. to detect, identify, and quantify
C L	chemical agents from a distance by employment of the preferred doctrine of contamination avoidance.	erred doctrine of contamination avoidance.	action of the control
010	Advance renetrator Development in Tank Municipis (Farmer: Onice Kniguom): Develor cartridge, to defeat modern tanks equipped with Kinetic Energy - Explosively Reactive Armor.	A retuintions (Farther: Onice Kinguoni): Develop an auvanceu penenatot, and potentiany a common with Kinetic Energy - Explosively Reactive Armor.	cuator, and potentially a common
Project D691	Pag	Page 3 of 11 Pages	Exhibit R-2 (PE 0603790A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTIFICATION	ON SHEET (I	R-2 Exhib	it)	DATE Febru	February 1997
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603790A NAT	TITLE NATO Res	PE NUMBER AND TITLE 0603790A NATO Research & Development		PROJECT D691
FY 1999 Planned Program: (continued) • 355 Electronic Warfare Simulation Common Set (Partner: Australia): Develop a common set of characteristics and countermeasures for advanced missile guidance systems. Test results in hybrid software and hardware-in-the-loop simulations to determine survivability of new guidance systems. 305 Low Level Air Picture Interface (LLAPI) (Partners: Canada, Germany, France, Netherlands, United Kingdom): Continue to develop automated interfaces between U.S. and Allied short range air defenses for radar data exchange and demonstrate systems interoperability. 102 Short Range Surface-to-Air Missile Guidance Technology (ROKSAM) (Partner: South Korea): Develop dual mode lock-on-after-launch guidance concepts, and test the concepts using existing seekers through hardware-in-the-loop simulations. 100 Report to Congress: Pursuant to 10 USC 2350a, prepare and provide to USD(A&T) the Army section of the 1997 Report to Congress on the International Cooperative Research and Development Program Total 11169	n Common Set (Partner: results in hybrid software Ce (LLAPI) (Partners: C.S. and Allied short range lissile Guidance Technol concepts using existing se to 10 USC 2350a, prepare uch and Development Pro	: Australia): Develorand hardware-in-the sanada, Germany, He air defenses for raddogy (ROKSAM) (Peckers through hardward and provide to USD ogram	p a common seloop simulatic rance, Nether or data exchang artner: South are-in-the-loop (A&T) the Arr	Set (Partner: Australia): Develop a common set of characteristics and countermeasures for advanced ybrid software and hardware-in-the-loop simulations to determine survivability of new guidance systems) (Partners: Canada, Germany, France, Netherlands, United Kingdom): Continue to develop led short range air defenses for radar data exchange and demonstrate systems interoperability. Iance Technology (ROKSAM) (Partner: South Korea): Develop dual mode lock-on-after-launch ing existing seekers through hardware-in-the-loop simulations. 2350a, prepare and provide to USD(A&T) the Army section of the 1997 Report to Congress on the velopment Program	nd countermeasure ivability of new gu lom): Continue to stems interoperabi al mode lock-on-a 7 Report to Congre	s for advanced idance systems. develop lity. fter-launch sss on the
B. Project Change Summary FY 1997 President's Budget Request Appropriated Value	FY 1996 0	FX 1997 9963 9755	FY 1998 10207	F <u>Y 1999</u> 7454		
Adjustments to Appropriated Value FY 1998 Pres Bud Request	0	9755	13168	11169		
Change Summary Explanation: Funding: FY 1997: project decremented (-208) for undistributed congressional reductions FY 1998: DOD program restructured to move ongoing Army cooperative projec FY 1999: DOD program restructured to move ongoing Army cooperative projec	8) for undistributed congred to move ongoing Arm; ed to move ongoing Arm; ed to move ongoing Arm;	ressional reductions y cooperative projec y cooperative projec	s from OSD Pl s from OSD Pl	stributed congressional reductions ongoing Army PE (+2961). ongoing Army cooperative projects from OSD PE to Army PE (+3715).		
C. Other Program Funding Summary	FY 1996 FY 1997 I	FY 1998 FY 1999	FY 2000	FY 2001 FY 2002	FY 2003	To Total
RDTE, Defense-wide Appropriation 0603790D NATO Cooperative R&D	7700					
D. Schedule Profile	FY 1996 2 3 4	FY 1997	4	FY 1998 2 3 4	-	FY 1999 2 3 4
Combat Identification Interoperability Complete Fabrication and Integration Trials and Demonstration Completed Initial Data Report		×	×		·	
Project D691	Р	Page 4 of 11 Pages		Exh	Exhibit R-2 (PE 0603790A)	790A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Ex	hibit			DATE F	February 1997	266
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603790A NAT	Ιo	Resea	Research & Development	evelo			РКОЈЕСТ D691
D. Schedule Profile FY 1996	FY 1997	4	-	FY 1998	4	_	FY 1999 2 3	A
		•	-		•	-		r
Complete Hardware/Software Installation	×							
Complete Lab Demo/Tests & Simulations					×			
Complete Field Demonstration								×
logy								
cture	×							
Complete Wideband Subarray	×							
Complete Preliminary Point Design	×							
Complete US Design Assessments	×							
Complete UK Design Evaluation		×						
Complete Final Point Design				×				
CONDOR								·
Complete Integration Tests		×						
Complete Flight Test & Evaluation					×			
High Technology Switch								
Complete Simulation and Commo Link	×							
Complete Test & Evaluation Plan	×							
Complete Architecture Test & Evaluation				×				
Extended Air Defense								
Complete Integration Analysis	×							
Complete Trade-off Analysis			×					
Fighting Vehicle Propulsion Technology								
	×							
Preliminary Engine Analysis Complete		×						
Materials Characterization/Test Complete					×			
Combustion Test and Analysis Complete								×
Focal Plane Array Countermeasures								
Complete Missile Seeker Characterization	×							
Mathematical Model Development				×				
Complete Software Simulations						×		
Develop Advanced CM Model								×
	G 113				ן בי	1 0 1		
riget Doyl	rage 2 of 11 rages				EX.	7 K-7 PE	EXIIIDIL K-2 (PE UDUS/90A)	
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RDT&E BUDGET ITEM JUSTIFICATIO	TIFICATION SHEET (R-2 Exhibit)	ibit)	DATE February 1997	1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603790A NATO Re	אחחת Development Research & Development	pment	Р ROJE СТ D691
D. Schedule Profile	FY 1997	FY 1998	FY 199 1 2	9 4
	ח	ì	1	
Complete Performance Specification	×			•
Complete Subsystem Development		×		
Complete Brassboard Integration				×
s Cooperation Activity				
MOU Concluded X				
Complete Interface Requirements	1 1			
Complete Phase I Technical Test	×	,		
Complete Phase I Operational Tests		×		,
Complete Phase II Tests				×
MOU Concluded X				
Complete Analysis Phase		×		;
Complete Design & Fabrication Phase				×
Low Level Air Picture Interface				
Complete MOU Amendment(CA,NL,UK)	× .	;		
Complete Interface Development		×		ř
Complete Operational Testing				<
MOU Project Arrangement Concluded		,		
Complete Prototype Design		×	,	
Complete Fabrication & Integration			7	×
MOU Concluded X	;			
Complete Prototype Hardware Upgrades	×			ļ
Complete Systems Integration & Testing				×
Laser Standoff Chemical Detector		:		
MOU Project Arrangement Concluded		×		
Complete Analysis of Spectral Properties				×
Begin Laser Prototype Development				×
Advance Penetrator in Tank Munitions				
MOU Project Arrangement Concluded	×			
Project D691	Page 6 of 11 Pages	Exhi	Exhibit R-2 (PE 0603790A)	A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FIFICATION SHEET (R-	-2 Exhibit)	DATE Febru	February 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603790A NAT	DE NUMBER AND TITLE 0603790A NATO Research & Development		PROJECT D691
D. Schedule Profile FY 1996		-	FY 1 2	1999 3 4
•	4 - ×		4 1 2 X	ε 4 ×
Droing DA01	Page 7 of 11 Pages		Evhihit R.2 (DE OG03790A)	(408)
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	CT COST	3REAKD(JWN (R-	<u>@</u>	DATE F	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBI 06037	PE NUMBER AND TITLE 0603790A NATO Research & Development	Research	& Develo		PI D	РRОЈЕСТ D691
S	FY 1996	FY 1997 2877 2005 1500 1200 405 385 1050 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 238 238	FY 1998 2791 816 1428 565 66 2500 1020 642 335 305 335 205 510 0 100 0 13168	FY 1999 0 2542 0 0 0 0 0 1830 1020 1020 845 10150 305 1015 510 311169			
B. Budget Acquisition History and Planning Information							
Award or Performing Obligation Activity Date EAC	Project Total Office Prior to EAC FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations Hughes Training CPIF Jan 94 1600 16 Herdon, VA	1600		1100	268	0	0	1668
Project D691	Page 8 of 11 Pages	ages		Exhi	bit R-3 (PE	Exhibit R-3 (PE 0603790A)	
	561						Item 56

RDI	&E PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT	OJECT	COSTB	REAKD	COST BREAKDOWN (R-3)	3	DATE F	February 1997	766
BUDGET ACTIVITY 4 - Demonstration and Validation	ion and Val	idation			PE NUMBER AN 0603790A	PE NUMBER AND TITLE 0603790A NATO	Research &		Development		PROJECT D691
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project	Total						
Pertorming Activity	or Funding Vehicle	Obligation Date	Activity FAC	Office FAC	Prior to FY 1996	FV 1996	FV 1997	FV 1998	FV 1999	Budget to	Total
McDonell Douglas	CPIF	Nov 96	800	800	2//*		400	200	0		006
Mesa, AZ											
Quantum Research Huntsville, AL	FFP	May 95	350	350			300	20	0	0	350
CSC	CPFF	Aug 96	4800	4800			2075	3375	0	0	5450
rt wasiinigioli, r.A. TRW	CPAF	Mar 96	1313	1313			1267	0	0	0	1267
Redondo Bch, CA										,	
Madentech	CPFF	Feb 95	200	200			250	350	0	0	009
Shrewsbury, NJ Georgia Tech	CPFF	Aug 94	2920	2920			1300	089	384	260	2924
Atlanta, GA)))	ì
Dynetics Unnteville AI	CPFF	Aug 94	150	150			150	0	0	0	150
Mitre	FFRDC	Mar 96	100	100			100	0	0	0	100
Boston, MA											
Wayne State Univ Detroit, MI	CPFF	May 96	200	200			250	350	0	0	009
Rutgers Univ	CPFF	May 96	300	300			150	150	0	0	300
SRI	CPFF	Feb 96	450	450			250	200	0	0	450
Menlo Park, CA											
TBD	Competitive Best Value	TBD	TBD	TBD			475	4915	7285	Cont	Cont
Nichols Research	CPFF	Dec 96	200	200			0	300	0	0	300
Huntsville, AL Nuclear Metals	CPFF	Dec 98	009	009			0	. 0	404	300	704
Inc. Concord, MA											
				ţ	,			I			
Project D691				Pag	Page 9 of 11 Pages	res		Exh	Exhibit R-3 (PE 0603790A)	0603790A)	
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RD	RDT&E PROGRAM ELEMENT/	RAM EL		PROJECT	COST B	REAKDO	COST BREAKDOWN (R-3)	3)	DATE F	February 1997	997
BUDGET ACTIVITY 4 - Demonstration and Validation	tion and Va	lidation			PE NUMBER ANI 0603790A	PE NUMBER AND TITLE 0603790A NATO	Research &		Development		Р ROJE СТ D691
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project Office	Total Prior to					Budget to	Total
Periorming Activity	Or Funding Vehicle	Date	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Aerojet Ordnance	CPFF	Dec 98	009	009			0	0	404	300	704
Jonesboro, TN				,			Ć	(Š	
Olin Ordnance	CPFF	Dec 98	100	100			0	0	154	90	704
St. Fetersourg, FL Alliant	CPFF	Dec 98	70	70			0	0	139	35	174
Minnetonka, MN	-	ĸ.									1
SBIR/STTR							238				238
Support and Management Organizations	gement Organi	zations					100	100	707	Cont	Cont
ATCOM	MIPR						100	001	2 04	Collt	
Ft Eustis, VA							150	030	754	, tuo	Jone
CECOM	MIPR						061	067	774	Colle	Confl
Ft Monmouth, NJ							150	750	12V	, tuo	tuo'
TACOM	MIPR						OCI	720	4.74	Colli	
warren, Mi							000	300	304	, ac	tuo
ICPA	MIPK						700	200	100	COIII	Collin
Arg, MD	Mann						100	C	C	C	100
HM ADCCS Unatterville AI	MILTR))
DM THAAD	MIPR						200	0	0	0	200
Hunteville AI	WILL IN										
LOGSA	MIPR						125	25	129	Cont	Cont
Huntsville, AL											
MICOM	MIPR						0	130	254	Cont	Cont
Huntsville, AL											
PM TMAS	MIPR						0	20	154	Cont	Cont
Dover, NJ							,	,	•		(
LOGSA	MIPR						25	25	134	Cont	Cont
Huntsville, AL											
D.c.i.o.t D.601				Pro	Page 10 of 11 Pages	SOD.		Fxh	Exhibit R-3 (PF 0603790A)	.0603790A)	
Project D091				32	ar ir foor a	25.5				7 122 222	72
					563						Item 26

RDT&E P	ROGE	SAM ELI	RDT&E PROGRAM ELEMENT/PR	OJECT	COST B	REAKDO	ROJECT COST BREAKDOWN (R-3)	<u></u>	DATE F6	February 1997	997
BUDGET ACTIVITY 4 - Demonstration and Validation	nd Valid	dation			PE NUMBER AN 0603790A	PE NUMBER AND TITLE 0603790A NATO	Research	Research & Development	pment		PROJECT D691
Contractor or Contract Government Method/Ty Performing or Funding Activity Vehicle		Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Lest and Evaluation Organizations AMSAA MIPR	HZAUOUS						150	250	204	Cont	Cont
CECOM MIPR							150	150	204	Cont	Cont
Army Research MIPR Lab, APG, MD							100	200	304	Cont	Cont
Government Furnished Property: None	operty: N	lone									
Subtotal Product Development Subtotal Support and Management	ement						8305	11438	8770 1687	1245	Cont
Subtotal Test and Evaluation Total Project	-						400 9755	600 13168	712	1245	Cont
Decinal Deci					Daga 11 of 11 Dags			n Z			
				32	564	45 cm		Ž.	7 1 2 1 10	V06 16000	Item 56



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhil	bit)		DATE FeI	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE N	PE NUMBER AND TITLE 0603801A Aviation - Advanced Development	птге Vviation -	Advance	ed Develo	opment		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	12893	13104	7132	7450	5809	5898	9252	9583	Continuing	Continuing
DB32 Advanced Maintenance Concepts and Equipment	2136	2181	2656	2599	3026	3065	3454	3568	Continuing	Continuing
DB33 Cargo Handling and Mission Support Equipment	1356	2010	1931	2391	2783	2833	2997	3198	Continuing	Continuing
DB45 Aircrew Integrated Systems	9401	8913	2545	2460	0	0	2801	2817	Continuing	Continuing

Mission Description and Budget Item Justification: This PE provides advanced development aviation support of tactical programs associated with air mobility, advanced maintenance concepts and equipment, and Aircrew Integrated Systems (ACIS), formerly Aviation Life Support Equipment (ALSE). The projects in this Program Element support research efforts in the advanced development phase of the acquisition strategy and are correctly placed in Budget Activity 4.

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Exhibit R-2 (PE 0603801A)

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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA.	TION SI	TIFICATION SHEET (R-2 Exhibit)	2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 090	PE NUMBER AND TITLE 0603801A Avial	птсе viation -	E NUMBER AND TITLE 1603801A Aviation - Advanced Development	d Develo	opment		PROJECT DB32
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DB32 Advanced Maintenance Concepts and Equipment	2136	2181	2656	2599	3026	3065	3454	3568	3568 Continuing Continuing	Continuing

A. Mission Description and Justification: This project enhances utilization of current and future aircraft by improving the efficiency of maintenance (primarily in the area of diagnostics/prognostics) and servicing operations by validating new maintenance concepts to improve man machine interface, enhancing aircraft maintenance procedures and reducing operating and support costs. Included in the project are Digitized Aviation Logistics (DAL) elements such as: Portable Maintenance Aids (PMA), database management software, on-board diagnostics, digital source collector, health/usage monitoring system, trending analysis, and support infrastructure.

Acquisition Strategy: This project is an aggregate of advanced maintenance concepts-related projects. While the detailed acquisition strategy varies from project to project, the general strategy for each individual project is to complete the development effort through government testing (developmental and operational). Program documentation for milestone decision is prepared, as appropriate, concurrently with the development effort in preparation for program transition to the organization responsible for production and fielding.

FY 1996 Accomplishments:

- Demonstrated high confidence, automatic identification of voids, delaminations, and occlusions in composite structures.
- Initiated follow-on effort to complete operational implementation and address Tri-Service issues for the knowledge-based automated Non-Destructive Inspection/Non-Destructive Test (NDI/NDT) inspection and repair procedures for composite components. 97
 - Completed the pre-production design and the first unit fabrication of the Advanced Boresight Equipment.
 - Initiated an effort via an integrated Army product team (IPT) and cooperative agreement with the four major U.S. helicopter manufacturers, to conceptualize and design an optimal infrastructure for a digitally enhanced aviation logistics environment. 908
 - Completed the acquisition and technical planning documentation for development of advanced portable maintenance module.
- Completed joint Navy Helicopter Integrated Diagnostics System testing of seeded faults using vibration diagnostics to confirm a severely degraded high speed shaft condition and a bearing fault in an SH-60 main transmission module.
 - Completed a market survey to identify commercial off-the-shelf, environmentally safe, aircraft cleaning and deicing systems for evaluation.
 - Total

FY 1997 Planned Program:

- Conduct seeded fault testing for mechanical system diagnostic and prognostic development.
- Complete an infrastructure definition for on-board diagnostics as part of a digital aviation logistics system. Develop an implementation plan for each aircraft and support system.

Project DB32

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Exhibit R-2 (PE 0603801A)



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHE	ET (R-2	Exhibit)		DATE		February 1997	
BUDGET ACTIVITY 4 - Demonstrat	вирдет астіуіту 4 - Demonstration and Validation	PE NUMBER AN 0603801A		ion - Ad) TITLE Aviation - Advanced Development	velopr	nent	PROJECT DB32	ΞCΤ
FY 1997 Planned P 752 • 752 • 51 Total 2181	 FY 1997 Planned Program: (continued) 752 Initiate development of portable maintenance aids designed to utilize the original equipment three dimensional design database for diagnostics and repair, to support flexible scheduling of phased maintenance events, and to integrally incorporate the aircrew as part of the diagnostic and troubleshooting procedures. 51 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. Total 2181 	ce aids designed to utilize the original equipment three dised maintenance events, and to integrally incorporate the Business Technology Transfer (SBIR/STTR) Programs.	he original equad to integrally integrally isfer (SBIR/ST	ipment thre incorporate TR) Prograi	e dimensional the aircrew as ns.	design d	atabase for c	iagnostics and	p ₁
FY 1998 Planned Program:	wireless maintenance data network sh functional allocation for the critic ion program. The PMA field evaluation and develon-condition maintenance credit designation and develon-condition maintenance credit designation.	definition. cal elements of the digital aviation logistics system. Develop procedures and design the diagnostics by definition of fully integrated portable electronic aid. finition process.	viation logistic	s system. D	evelop proced	lures and	design the d	iagnostics	
FY 1999 Planned Program:	rogram: Develop virtual prototype of integrated digital maintenance infrastructure and evaluate feasibility of on-line technical expertise pools. Complete on-board diagnostics definition and demonstrate utility of logistical system interface. Develop wireless maintenance data network equipment and interfaces. Complete life extension procedures for on-condition maintenance.	nance infrastruct trate utility of lo it and interfaces. naintenance.	ure and evalua gistical system	ite feasibility n interface.	y of on-line tec	chnical ex	pertise pool	vi	
B. Project Change Summary FY 1997 President's Budget Appropriated Value	Summary FY 1996 Budget 2306 2371 2372	6 FY 1997 6 2228 1 2181	꼬	FY 1998 2853	<u>FY 1999</u> 2806				
Adjustments to Appropriated yaute FY 1998 Pres Bud Request		6 2181		2656	2599				
C. Other Program Funding Summary RDTE,A Budget Activity 2 PE 0602211 A47A Aeronautical and Aircraft Weapon	C. Other Program Funding Summary EX 1996 FY 1997 RDTE, A Budget Activity 2 PE 0602211 Project 15340 19213 A47A Aeronautical and Aircraft Weapons Tech*	FY 1998 F 24410	FY 1999 FX 27152 ,	EY 2000 EY	FY 2001 FY 2 28605 29	<u>FY 2002</u> E 29712	<u>FY 2003</u> 30374	To Cont Cont	Total Cost Cont
*Represents total fun	*Represents total funding in this PE, which only partially supports Project DB32. Project DB32	B32. Page 3 of 15 Pages	sage _c		Ш	xhibit R-	Exhibit R-2 (PE 0603801A)	801A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	CATION SHEET	(R-2 Exhibit)		DATE February 1997	1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603801A Avia:	ы тт∟е Aviation - Advanced Development	nced Devel	opment	PROJECT DB32
D. Schedule Profile FY 1996	FY 1997	F. 1 2	FY 1998	FY 1999	9 4
		•		· · · · · · · · · · · · · · · · · · ·	
Project DB32	Page 4 of 15 Pages		Exhib	Exhibit R-2 (PE 0603801A)	
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	I/PROJECT C	OST BREAK	DOWN (R-3		DATE February 1997	1997
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603801A Aviation	tion -	Advanced Development	pment	PROJECT DB32
A. Project Cost Breakdown Primary Hardware Development Software Development Software Development Systems Engineering Integrated Logistics Support DT/OT Program Management Research Personnel Miscellaneous SBIR/STTR Total: B. Budget Acquisition History and Planning Information: Not applicable	FY 1996 700 213 30 126 343 150 479 95 2136	EY 1997 370 504 425 167 549 115 51 2181	FY 1998 420 475 560 85 100 170 734 112	EX 1999 358 525 510 110 115 165 718 98 2599		
Project DB32	Page	Page 5 of 15 Pages		Exhibit	Exhibit R-3 (PE 0603801A)	A)

RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION S	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060	PE NUMBER AND TITLE 0603801A Avial	птге \viation -	PENUMBER AND TITLE 0603801A Aviation - Advanced Development	d Develo	opment	g ()	РРОЈЕСТ DB33
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DB33 Cargo Handling and Mission Support Equipment	1356	2010	1931	2391	2783	2833	2997	3198	3198 Continuing Continuing	Continuing

and off-loading of helicopter cargo in all-weather, around the clock combat scenarios. It also replaces obsolete and insupportable ground support equipment with new and A. Mission Description and Justification: This project develops equipment, practices, and procedures for the operational improvement of planning, loading, transport, standardized multi-output equipment compatible with all Army aircraft models; develops rapid battle repair procedures and tools to speed the return of aircraft to combat ready status; and develops new equipment for aerial recovery of damaged aircraft.

Acquisition Strategy: This program is an aggregate of advanced mission support and cargo handling concepts-related projects. While the acquisition strategy varies from project to project, the general strategy for each individual project is to complete the development effort through government testing (developmental and operational). Program documentation for milestone decision is prepared, as appropriate, concurrently with the development effort in preparation for program transition to the organization responsible for production and fielding. Programs are executed in coordination with the user and the gaining organization.

FY 1996 Accomplishments:

	• Completed critical design review of the advanced internal and external cargo handling system. Fabricated the composite floor panels with integral	flip-over conveyor rollers, 463L pallet guide rails/restraint system, Night Vision Goggle (NVG) compatible cabin curb lighting, and High Mobility	Multi-Purpose Wheeled Vehicle (HMMWV) guide rails. Initiated development and test of winchable cargo hooks.
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Total 1356

FY 1997 Planned Program:

- Complete the demonstration of advanced internal and external cargo handling systems.
 - 146 Conduct an aircraft cleaning and de-icing system NDI evaluation.
- Complete knowledge based NDI/NDT inspection and repair procedures for composite components. 403
- Modify and complete turbine engine diagnostic system for T-700 engine as part of an overall integrated portable engine test set program. 261
- Initiate portable engine test set development for entire aviation fleet that will handle both the aircraft interface as well as the engine itself. 405
- Initiate development of a contact maintenance electrical power generator capable of supporting the complete range of power and frequency requirements necessary to support aircraft maintenance actions. 151
 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 2

Project DB33

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Exhibit R-2 (PE 0603801A)





RDT&E BUDGET ITEM JUSTIFICAT	FIFICATION SHEET (R-2 Exhibit)	-2 Exhib	it)		DATE Febr	February 1997	7
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603801A Aviation - Advanced Development	тге viation - A	dvanced	d Develo	pment	PR(PROJECT DB33
 FY 1998 Planned Program: 550 Complete portable engine test set development. 701 Initiate demonstration of a cargo movement system for heavy (95th percentile) load. 285 Develop environmentally friendly mission support equipment. 395 Prototype field repair equipment for low observable composite components. Total 1931 	eavy (95th percentile) ment. posite components.	load.					
 FY 1999 Planned Program: 1003 Virtual prototype heavy-lift capability and evaluate alternatives. 403 Initiate smart coupling for aircraft cargo operations. 285 Complete low observable (LO) composite repair demonstration. 700 Initiate cargo and logistics management and delivery system. Total 2391 	natives. tration. tem.						
FY	FY 1997 2053 2010	FY 1998 2071	<u>FY 1999</u> 2581	01			
Adjustments to Appropriated Value FY 1998 Pres Bud Request	2010	1931	2391				
Change Summary Explanation: Funding: FY96 (-737) reprogrammed to higher priority requirements.	priority requirements.						
C. Other Program Funding Summary FV 1006 FV 1007	EV 1008 FY 1000	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
	•	27132	28605	29712	30374	Cont	Cont
* Represents total funding in this PE, which only partially supports Project DB33.	33.						
				1			
Project DB33	Page 7 of 15 Pages	1		Exhibi	Exhibit R-2 (PE 0603801A)	03801A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE	February 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603801A Aviation - Ad	orit∟E Aviation - Advanced Development	PROJECT DB33
D. Schedule Profile	FY 1997	FY 1998	FY 1999
n	7		
Project DB33	Page 8 of 15 Pages	Exhibit R-2 (PE 0603801A)	E 0603801A)
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RDT&E PROGRAM ELEMENT/PROJ	JECT CO	PROJECT COST BREAKDOWN (R-3)	JOWN (R-3		DATE February 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	H 00	PE NUMBER AND TITLE 0603801A Aviation - Advanced Development	tion - Advan	ced Develop	PROJECT DB33
	FY 1996	FY 1997	FY 1998	FY 1999 408	
Software Development		>	233	390	
Systems Engineering	216	230	320	450	
Integrated Logistics Support			75	100	
Developmental Test/Operational Test (DT/OT)		300	20	100	
Program Management	149	100	160	165	
Research Personnel	460	505	534	999	
Miscellaneous	31	59	52	112	
SBIR/STTR		49			
Total	1356	2010	1931	2391	
15:0					

B. Budget Acquisition History and Planning Information: Not applicable

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Exhibit R-3 (PE 0603801A)

RDT&E BUDGET ITEM JUS	FEM JUS	TIFICA.	TION SI	STIFICATION SHEET (R-2 Exhibit)	k-2 Exhi	bit)		DATE Fek	February 1997	26
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 0 0 0	PE NUMBER AND TITLE 0603801A Aviat	тітге Aviation -	E NUMBER AND TITLE 0603801A Aviation - Advanced Development	ed Develo	opment		PROJECT DB45
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DB45 Aircrew Integrated Systems	9401	8913	2545	2460	0	0	2801	2817	2817 Continuing Continuing	Continuing

Retained Unit (PRU), the HGU-56/P helmet. Improved Noise Reduction and Speech Intelligibility technology is being developed in concert with the AICH program. None development and evaluation of emerging technologies and the adaptation of commercial and nondevelopmental items (NDI) to military requirements. The Cockpit Air Bag injuries/casualties on UH-60 and SH-60 aircraft; complementing the AH-64 Cockpit Air Bags System Engineering, Manufacturing, and Development (EMD) program, with protection, and flame/heat protection. The AW design will improve overall aircrew mission performance, aircrew comfort, aircrew and aircrew station interface, safety, and survivability of Army aircrews and passengers on the future integrated battlefield and during related training activities. Advanced development programs will focus on the survivability. The Aircrew Integrated Common Helmet (AICH) program, an Air Warrior component, is the major information management, control, and aircraft interface System (CABS) effort has evaluated a variety of supplemental restraint system approaches to improve crew and passenger crash survivability and thereby reduce potential follow-on adaptation to the OH-58D and CH-47D aircraft. The CABS project transitioned into the EMD life cycle phase during FY 96. The Air Warrior (AW) program Development: This project provides advanced development for those systems and items of equipment that are unique and necessary to the sustainment and enhanced for the aviator. The AICH incorporates Comanche electronics as an Aircraft Retained Unit (ARU) utilizing new flat panel displays on the latest, most advanced Pilot survivability, concealment and environmental protection, ballistic protection, night vision capability, heads-up displays, nuclear flash protection, directed energy eye A. Mission Description and Justification: Project DB45 - Aircrew Integrated Systems (ACIS) - formerly Aviation Life Support Equipment (ALSE) Advanced will provide the aircrew with a systems approach to chemical and biological (CB) protection, noise protection, microclimatic conditioning, crash and post-crash of these efforts duplicate any aircraft program efforts. Both joint and service independent efforts will be pursued under the scope of this project.

Acquisition Strategy: DB45 - Two Air Warrior Program Definition and Risk Reduction (PDRR) development contracts will be awarded in FY 97 to separate competing teams. At Milestone II, there will be a down selection of one team for a combined PDRR and EMD phase.

FY 1996 Accomplishments:

- Continued CABS development contractor component, environmental, and dynamic system tests required prior to Milestone II (Joint Service)
 - Continued Air Warrior trade studies, prepared developmental contract Request for Proposal (RFP), and integrated AICH effort (Joint Interest) 624
 - Continued AICH contractor prototype development for laboratory and Comanche cockpit evaluation of miniature flat panel displays 6427
 - Initiated NBC Advanced Initiatives Advanced Development for aircrew and air vehicle in conjunction with the Air Warrior project

Project DB45

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Exhibit R-2 (PE 0603801A)





RDT&E BUDGET ITEM JUS	SOF ME	TIFICATION SHEET (R-2 Exhibit)	ION SH	EET (R	2 Exhit	oit)		DATE Febr	February 1997	7
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NUI 0 60 3	PE NUMBER AND TITLE 0603801A Avia	rre Viation -	Advance	PE NUMBER AND TITLE 0603801A Aviation - Advanced Development	opment	PR(PROJECT DB45
 FY 1997 Planned Program: 8703 Initiate Air Warrior Program Definition and Risk Reduction contractor effort and continue incorporation of AICH, Improved Noise Reduction and Speech Intelligibility technology, and NBC effort 210 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Programs Total 8913 	efinition and sy, and NBC earch/Small	I Risk Reduction contractor effort and continue incorpon effort Business Technology Transfer (SBIR/STTR) Programs	tion contrac	tor effort an	d continue i	ncorporation ograms	ı of AICH, I	mproved Nois	e Reduction	and
 FY 1998 Planned Program: 2545 Continue Air Warrior Program Definition and Risk Reduction (PDRR), and flight test of AICH miniature flat panel displays Total 2545 	Definition 8	nd Risk Red	uction (PDR	R), and fligl	ht test of AI	CH miniatu	re flat panel	displays		
FY 1999 Planned Program: • 2460 Complete Dem Val Total 2460										
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 9636 9907	FY	FY 1997 4104 8913	<u>FY 1998</u> 2733	FY 1999 2654	9 <u>9</u> 54			
Adjustments to Appropriated Value FY 1998 Pres Bud Request		-306 9401		8913	2545	24	2460			·
Change Summary Explanation: Funding: The increase i component of the Air W		in FY97 (+480 arrior project.	.09) is due to t.	the Congre	ssional Plus	up for the	Aircrew Inte	in FY97 (+4809) is due to the Congressional Plus-up for the Aircrew Integrated Common Helmet arrior project.	n Helmet	
C. Other Program Funding Summary RDTE, A Budget Activity 5 PE 0604801A Project	FY 1996 4885	FY 1997 5403	FY 1998 5109	FY 1999 6067	FY 2000 2076	FY 2001 2065	<u>FY 2002</u> 2172	FY 2003 2181	To <u>Compl</u> Cont	Total Cost
DC45 (Aircrew Integrated Systems -EMD) Aircraft Procurement, Army (APA) SSN AZ3110 Aircrew Integrated Systems*	7142	13280	12472	10003	8982	8920	23856	36827	Cont	Cont
*Represents the entire APA program for ACIS.										
Project DB45			Page 11 of 15 Pages	5 Pages			Exhib	Exhibit R-2 (PE 0603801A))3801A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		N N	JSTII	-ICA]		SHEE	T (R	-2 Ex	hibit				DATE	February 1997	√	97
BUDGET ACTIVITY 4 - Demonstration and Validation	_					PE NUMBER AND TITLE 0603801A Aviat	R AND T	אדורנ Aviation - Advanced Development	n - A(dvanc	ed D	evelo	pmen			PROJECT DB45
D. Schedule Profile		FY 1996 2 3	996 3	4		FY 1997 2 3	.97 3	4	·	FY 1998 2 3	998 3	4		FY 1999 2 3	999	4
Proposal sived roposal (RFP) Reduction	*	*	*											ı		
Finish Statement of Work for competition Finish Statement of Work for competition PDRR RFP released to industry Source Selection and award contracts Post Award Conference Review Functional Analysis Review of contractor design				*	*	×	×	×	×							
Source Selection of best team's system Milestone II decision Preliminary Design Review Continue Air Warrior combined PDRR and EMD/contractor prototype development										××	×	×	×	×	×	×
Initiated advanced development /design of AICH optical display prototypes Fabrication of AICH prototypes Lab test AICH optics and displays AICH Airworthiness testing Perform AICH flight test Evaluate AICH flight test			*		×	×	×			×		×	×			
NBC Initiated NBC Initiatives development for air vehicle and aircrew		*														
Project DB45					Page 1	Page 12 of 15 Pages 576	ages					Exhibit	R-2 (PE	Exhibit R-2 (PE 0603801A)	01A)	Item 57
						2										



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	LIE	IM JL	ISTII	-ICAT	NO NO	SHEET	(R-2 E	Exhib	Œ		Δ	DATE Fe	February 1997	1997	
BUDGET ACTIVITY 4 - Demonstration and Validation	_				<u>a</u> 0	PE NUMBER AND TITLE 0603801A Aviation - Advanced Development	ND TITLE Aviat	ion - /	Advan	ced De	velop	ment		PROJECT DB45	F.
D. Schedule Profile	-	FY IS	1996 3	4	-	FY 1997	4	-	FY 1998	998 3	4	-	FY 1999 2	9 2	
Integrated NBC Advanced Initiatives with Air Warrior PDRR Cockpit Air Bags System (CABS) UH-60 CABS instrumented flight test UH-60 CABS Underwater test Transition to EMD phase, UH-60 CABS UH-60 CABS EMD contract award	· *	*	*	* *	•	•		•	ı)		•			
*Denotes completed effort						,									
															-
Decine DD46				1) aca 13	Darra 13 of 15 Darras	_				::dic ::dic ::dic) HOI		á	
rioject DD45					48e 1.	5 0/ 13 1 uges					ל אונטון ג. אונטון גי	77/1/5	000000	Item 57	57

RDI	RDT&E PROGRAM ELEMENT/P	SRAM EL	EMENT/PR	ROJECT COST BREAKDOWN (R-3)	SOST BI	ZEAKDO	WN (R-:	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation	tion and Va	lidation			PE NUMBER AND TITLE 0603801A Avia	AND TITLE A Aviation	on - Advai	रमापट Aviation - Advanced Development	lopment	<u>а</u>	PROJECT DB45
A. Project Cost Breakdown Development Organizations Support and Management Organizations Test and Evaluation Organizations SBIR/STTR Total	eakdown iizations ement Organizat Organizations	ions		FY 1996 7161 1725 515 9401	EX.	EY 1997 7034 1169 500 210 8913	FY 1998 1865 600 80 2545	FY 1999 1800 580 80 2460			<u> </u>
B. Budget Acquisition History and Planning Information	tion History and	d Planning Inf	ormation								
Performing Organizations	izations										
Contractor or Government	Contract Method/Type		Performing	Project	Total						E
Performing Activity	or Funding Vehicle	Obligation Date	Activity <u>EAC</u>	Office <u>EAC</u>	Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	l otal Program
Product Development Organizations	ent Organizatio	suc									
CABS, Simula,	SS-CPFF	May 1994	3183	3183	2629	554	0	0	0	0	3183
Phoenix, AZ Air Warrior AICH,	SS-CPFF	Jul 1995			3134	6427	5614	100	100	Cont	Cont
Gentex, Carbondale, PA											
Air Warrior, various simulation	C-CPFF	Jun 1995	1208	1208	1123	30	20	S	5	25	1208
facilities					•		4	1			(
Air Warrior, AD	C-CPFF	Mar 1997			0	0	1100	1700	1695	Cont	Cont
Air Warrior,	MIPR	Jan 1997	360	360	0	0	300	09	0	0	360
HRED, Aberdeen											
Miscellaneous SBIR/STTR	MIPR		998	998	716	150	0 210	0	0	0	866
Support and Management Organizations CAS, Huntsville, C-T&M Dec 1 AL	igement Organi C-T&M	izations Dec 1993			959	330	200	140	130	Cont	Cont
Project DB45				Page	Page 14 of 15 Pages	ges		Exh	Exhibit R-3 (PE 0603801A)	0603801A)	
					578						Item 57



RD	RDT&E PROGRAM ELEMENT/	RAM EL	EMENT/PR	PROJECT	COST BI	REAKDO	BREAKDOWN (R-3)	3)	DATE Fe	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation	ation and Val	lidation			PE NUMBER AND TITLE 0603801A Avia	AND TITLE) TITLE Aviation - Advanced		Development		PROJECT DB45
Contractor or Government Performing <u>Activity</u> Camber,	Contract Method/Type or Funding Vehicle C-T&M	Award or Obligation <u>Date</u> Dec 1993	Performing Activity <u>EAC</u>	Project Office EAC	Total Prior to <u>FY 1996</u> 737	FY 1996 331	F <u>Y 1997</u> 200	FY 1998 140	FY 1999 130	Budget to Complete Cont	Total <u>Program</u> Cont
Huntsville, AL ATCOM, St. Louis,	MIPR				1411	200	499	300	300	Cont	Cont
MO/AMCOM, Huntsville, AL AFDD, Moffett	MIPR	Nov 1993			1588	0	0	'n	8	Cont	Cont
USAARL,	MIPR	May 1995			780	224	100	'n	ν.	Cont	Cont
AATD, Ft. Eustis,	MIPR				640	240	100	8	5	Cont	Cont
VA Natick R&D Center, Natick,	MIPR				445	100	70	v	5	Cont	Cont
Test and Evaluation Organizations TECOM/ATTC, MIPR Ft. Rucker, AL	on Organizations MIPR	Ø			278	515	500	80	80	Cont	Cont
Government Furnished Property: Not Applicable	ished Property:	Not Applicab	lè								
Subtotal Product Development Organizations Subtotal Support and Management Organizations Subtotal Test and Evaluation Organizations Total	levelopment Orga nd Management C 3valuation Organi	nizations Jrganizations izations		Ť	13859 278 14137	\$886 515 9401	8413 500 8913	2465 80 2545	2380 80 2460	Cont	Cont
				٥				i L	E. Kriikit D 2 (DE 0602904 A)	(A 10803804 A)	
Project DB45				Fax	Page 13 of 13 Pages 579	lges.		X L	ווטוו א-ט (אב	(VI pospoo	Item 57

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SI	IFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE FeI	February 1997	26
BUDGET ACTIVITY 4 - Demonstration and Validation			PE N 060 Dev	PE NUMBER AND TITLE 0603802A Weal Development	ттге Veapons nt	and Mun	itions - /	E NUMBER AND TITLE 1603802A Weapons and Munitions - Advanced Development		PROJECT DAS2
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DAS2 Small Arms Improvements	949	0	0	0	1812	2919	1498	1099	0	8277

control, training devices, and ammunition. This project will begin development of a small arms fire control system (SAFCS) providing an integrated day/night fire control A. Mission Description and Budget Item Justification: This project aims to achieve improvements in target acquisition, target effect, lethality, training effectiveness, system with a laser range finder for use on the MK19-3 Grenade Machine Gun. The SAFCS is a continuation of an advanced development effort conducted by the Joint weapons (.38 cal, .45 cal; 9mm), individual weapons (5.56mm - 7.62mm), and crew served weapons (5.56mm - 40mm). Also included is related equipment such as fire durability, and reliability, availability and maintainability (RAM) for small arms weapons systems. Current small arms systems include a variety of personal defense Service Small Arms Program. This project focuses on efforts associated with advanced technology development. It demonstrates general military utility, to include demonstration and validation, of a SAFCS and is correctly placed in budget activity 4.

Acquisition Strategy: Not Applicable

FY 1996 Accomplishments:

- 75 Conducted market survey/Trade-off Determination
- 248 Developed system performance specification
- 75 Prepared and staff Purchase Description
- 75 Prepared procurement package input for test hardware
 - 350 Awarded contract for test hardware
 - 250 Awarded Contract for test hardware 126 Conducted test and develop reports
 - Total 949

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program: Project not funded in FY 99

Project DAS2

Page 1 of 3 Pages

Exhibit R-2 (PE 0603802A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ICATION S	SHEET (F	۲-2 Exhib	it)	DAIE Febri	February 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE 06	PE NUMBER AND TITLE 0603802A Weal Development	ттге Veapons a nt	nd Munitio	PE NUMBER AND TITLE 0603802A Weapons and Munitions - Advanced Development	PROJECT DAS2
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request	FY 1996 949 949 0 949	FY 1997 0 0 0 0	FY 1998 0 0 0 0	FY 1999 0 0 0 0		
 C. Other Program Funding Summary None D. Schedule Profile 1 2 3 	-	FY 1997 2 3	4	FY 1998 2 3	FY 1 2	FY 1999 2 3 4
Conduct market survey /Trade-off Determination Develop system performance specification Prepare and staff Purchase Description Prepare procurement package input for test hardware Award Contract for test hardware Conduct test and develop reports	× × ××	×	×			
				·		
Project DAS2	Page 2 o	Page 2 of 3 Pages			Exhibit R-2 (PE 0603802A)	3802A)

RDT&E PR	RDT&E PROGRAM ELEMENT/P	EMENT/PR	ROJECT COST BREAKDOWN (R-3)	SOST BI	ZEAKD	OWN (R-	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation	Validation			PE NUMBER AND TITLE 0603802A Weal Development	AND TITLE A Weap	ons and M	PE NUMBER AND TITLE 0603802A Weapons and Munitions - Advanced Development	Advance	,	PROJECT DAS2
A. Project Cost Breakdown Other Government Agency Support Program Management Support Contract Support Total	port	·	FY 1996 520 79 350 949		FY 1997	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information	y and Planning L	<u> </u>								
Performing Organizations Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle	lype Award or ng Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations ARDEC MIPR I	zations Multi	370	370	0	370	0	0	0	5238	2608
Support and Management Organizations PM Small Arms Allot Multi TACOM DC 2Q97	ganizations Multi 2Q97	79	79	0 0	79	0 0	0	0	540	619
Picatinny Arsenal Test and Evaluation Organizations TECOM MIPR TEXCOM MIPR		35 40	35 40	0 0	35 40	0 0	0 0	0 0	0 0	35 40
ARDEC MIPR	Multi	75	75	0	75	0	0	0	1550	1625
Subtotal Product Development	arty none				370				5238	5608
Subtotal Support and Management Subtotal Test and Evaluation Total Project	ient				429 150 949				740 1550 7328	1700 1700 8277
Project DAS2			Pag	Page 3 of 3 Pages	Sa	į	Exh	Exhibit R-3 (PE 0603802A)	0603802A)	
				582						Item 58



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (F	k-2 Exhi	bit)		DATE Fel	February 1997	97
8UDC 4 -	BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060 Adv	PE NUMBER AND TITLE 0603804A Logi Advanced Deve	ऽमात∟ह Logistics and Engineering Equipment Development	and Eng ent	ineering	Equipme	int -	
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	5587	7433	6783	6833	7731	6535	13693	13317	Continuing	Continuing
DG01	Combat Engineer Equipment Advanced Development	0	0	0	0	0	0	944	1415	Continuing	Continuing
DG10) Advanced Tactical Power Sources	128	129	135	178	198	216	477	475	Continuing	Continuing
DG11	Advanced Electrical Energy Concepts Advanced Development	216	213	214	1371	1020	743	616	570	Continuing	Continuing
DG14	Logistics Support Equipment Advanced Development	92	98	96	98	105	101	103	100	Continuing	Continuing
DK39	General Support Equipment Advanced Development	707	851	1689	1809	1980	2103	2424	2431	Continuing	Continuing
DK41	Petroleum, Oil and Lubricant (POL) Distribution Equipment Advanced Development	864	872	859	824	899	892	944	946	Continuing	Continuing
D266	Airdrop Equipment Advanced Development	1116	1414	1359	1353	1336	1503	4864	4700	Continuing	Continuing
D428	Rigid Wall Shelter Advanced Development	2464	3868	2431	870	983	977	1970	1977	Continuing	Continuing
D526	Marine Orientation Log Equipment Advanced Development	0	0	0	330	1210	0	1351	703	Continuing	Continuing
Miss	Mission Description and Budget Item Justification: This pr	<u>n</u> : This pro	gram suppor	ts advanced	developmen	ogram supports advanced development of new and improved technologies for combat support and combat	improved te	chnologies	for combat s	upport and c	ombat

batteries, potable water, environmental control and petroleum equipment are necessary to improve safety and increase the tactical mobility, operational capability, lethality and survivability on the digital battlefield of the first to fight; and to provide for greater sustainment of all combat forces while reducing the logistics support burden. The service support equipment essential to sustaining combat operations. Advancements in airdrop, rigid wall shelters, marine craft, bridging, electric power generators and projects in this Program Element focus on efforts to demonstrate general military utility, to include demonstration and validation and are therefore correctly placed in Budget Activity 4.

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Exhibit R-2 (PE 0603804A)

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060 Adv	PE NUMBER AND TITLE 0603804A Logis Advanced Devel	E NUMBER AND TITLE 0603804A Logistics and Advanced Development	and Eng ent	ineering	FE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment Advanced Development		PROJECT DG10
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DG10 Advanced Tactical Power Sources	128	129	135	178	198	216	477	475	475 Continuing Continuing	Continuing

conversion systems to satisfy the unique tactical and logistical requirements of portable electronic battlefield equipment. This effort also includes state-of-charge measuring A. Mission Description and Justification This program develops advanced tactical power sources to improve soldier mobility, sustainability, and survivability. This is and indicating circuitry as well as safety protection circuitry. Superior battery charging and analyzing equipment required to meet unique requirements are also included. the only project that bridges the gap between science and technology and full scale production of new higher energy density, lower cost, all-weather batteries/energy

Acquisition Strategy: Transition to production

FY 1996 Accomplishments:

- 40 Developed an improved rechargeable battery and charger based on the lithium ion battery chemistry for use in the Single Channel Ground and
 - Developed techniques for reducing battery related disposal costs. Airborne Radio System (SINCGARS).
 - Developed a vehicular mounted battery charging station. 40 48 128
 - Total

FY 1997 Planned Program:

- Conduct field test and evaluation of next generation of primary lithium based batteries.
 - Begin development of high power battery chemistry with no toxic/hazardous materials. 64 45 129
 - Develop High Energy/High Power throw away battery for Force XXI Soldier.

FY 1998 Planned Program:

Total

- Develop cost effective, environmentally friendly, ultra thin rechargeable lithium battery for Force XXI Soldier.
- Test, evaluate proof of principle for thin cells and prototype batteries.
- 108 27 135

Project DG10

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Exhibit R-2 (PE 0603804A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET (R-2 Exhib	it)	DATE February 1997	y 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603804A Logis Advanced Deve	PE NUMBER AND TITLE 0603804A Logistics and Advanced Development	nd Engineeri nt	PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment - Advanced Development	PROJECT DG10
 FY 1999 Planned Program: 139 Design and develop conformal battery packaging for Standard Family of Rechargeable Lithium Batteries. 39 Conduct field tests and prepare specifications for thin, conformal rechargeable batteries family. Total 178 	standard Family of Recl conformal rechargeabl	nargeable Lithiu e batteries famil	ım Batteries. iy.		
B. Project Change Summary FY 1996 FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	96 FX 1997 30 132 35 129 -7 129	FY 1998 130 135	FY 1999 172 178		
C. Other Program Funding Summary: None					
D. Schedule Profile	FY 1997	4	FY 1998	FY 1999	99
	X* X* X* X* Page 3 of 30 Pages	×	úì ×	X X X Exhibit R-2 (PE 0603804A)	× (4
					14000 50

RDT&E PROGRAM ELEMENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	OWN (R-3)		DATE February 1997	1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment - Advanced Development	stics and Eng	gineering Ec	quipment -	PROJECT DG10
A. Project Cost Breakdown Hardware Development Test and Evaluation Total	5 FY 1997 3 99 30 30	FY 1998 115 20 135	FY 1999 148 30 178		
B. Budget Acquisition History and Planning Information: None					
			: :: :: :: ::		
Project DG10	Page 4 of 30 Pages		Exhibit k	Exhibit K-3 (PE 0603804A)	1
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RDT&E BUDG	ET ITI	BUDGET ITEM JUS		TION SE	HEET (F	FIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 19	1997
BUDGET ACTIVITY 4 - Demonstration and Validation	ion			PE NU 060 Adv	PE NUMBER AND TITLE 0603804A Logis Advanced Deve	БТПСЕ Logistics and Development	PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment Advanced Development	ineering	Equipme	1	Р ко ЈЕСТ DG11
COST (In Thousands)		FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DG11 Advanced Electrical Energy Concepts Advanced Development	dvanced	216	213	214	1371	1020	743	616	570	Continuing	Continuing
A. Mission Description and Justification: Provides advanced development for electrical energy devices to improve soldier mobility, readiness and survivability. This project supports initiatives which will lead to tactical electric power procurements in diesel powered generators and power units/power plants rated at 3-200 kilowatts (kW) with higher efficiency, lighter weight, easier maintainability and higher reliability.	n: Provide to tactical er maintai	es advanced l electric pov nability and	developmer ver procurer higher relia	nt for electric nents in dies bility.	al energy de el powered	evices to imp generators ar	evelopment for electrical energy devices to improve soldier mobility, readiness and survivability. This er procurements in diesel powered generators and power units/power plants rated at 3-200 kilowatts (kV igher reliability.	mobility, re ts/power pla	adiness and ants rated at	survivability 3-200 kilow	. This atts (kW)
Acquisition Strategy: Complete advanced development and transition to engineering development.	d develop	ment and tra	nsition to er	ıgineering de	evelopment.						
 FY 1996 Accomplishments: 126 Completed evaluation of commercial digital displays, controls and diagnostics in 60kW engine generators. 90 Initiated evaluation of permanent magnet generators with associated electronics. Total 216 	on of comr	nercial digit ent magnet ≨	al displays,	controls and ith associate	diagnostics d electronic.	in 60kW eng s.	gine generatc	ors.			
 FY 1997 Planned Program: 209 Evaluate digital display controls and diagnostics over the family of generator sets. 4 Small Business Innovation Research/Small Business Technology transfer (SBIR/S Total 213 	olay contro ovation Res	ols and diagn search/Smal	ostics over	the family of echnology tr	f generator s ransfer (SBI	ostics over the family of generator sets. Business Technology transfer (SBIR/STTR) Program	ogram				
FY 1998 Planned Program: • 214 Initiate evaluation of lightweight efficient engine design for 5kW, 10kW, and 15kW generator sets. Total 214	f lightweig	tht efficient	angine desię	ın for 5kW,	10kW, and	SkW genera	itor sets.				
 FY 1999 Planned Program: 706 Complete evaluation of lightweight efficient engine designs for 5kW, 10kW, and 15kW generator sets. 665 Complete evaluation of permanent magnet generators and associated electronics. Total 1371 	ı of lightw ı of perma	eight efficie nent magnet	nt engine de generators	ssigns for 5k¹ and associate	W, 10kW, a	nd 15kW gei .s.	nerator sets.				
Project DG11				Page 5 of 30 Pages	30 Pages			Exhibi	Exhibit R-2 (PE 0603804A))603804A)	
											14 50

RDT&E BUDGET ITEM JUST	EM JUS		ION SF	FICATION SHEET (R-2 Exhibit)	-2 Exhit	oit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060 Adv	PE NUMBER AND TITLE 0603804A Logis Advanced Deve	D TITLE Logistics and Development	and Engi ent	neering	PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment Advanced Development		PROJECT DG11
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request		EX 1996 221 227 -11 216		FY 1997 217 213 213	FY 1998 215 214	FY 1999 212 1371	2 2 1			
Change Summary Explanation: Funding increase (+1159) in FY 1999 reprogrammed into this project for the evaluation of light weight efficient engine designs for 5kw, 10kw and 15 kw generator sets and completion of the evaluation of permanent magnet generators and associated electronics.	+1159) in FY enerator sets a	1999 reprog nd completic	rammed int on of the ev	o this project aluation of p	t for the eval	uation of lig	ht weight ef tors and ass	Ticient engine ociated electr	designs for onics.	: 5kw,
C. Other Program Funding Summary.	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
RDTE, 0604804A.D194, Engine Driven	1423	2183	7534	9015	8184	5290	1364	1417	Cont	Cont
OPABA3: Generators & Assoc Equip (MA9800)	13482	29980	7706	74952	101113	90717	41000	38368	Cont	Cont
D. Schedule Profile	FY 1996	4	1 2	FY 1997 2 3	4	FY 1998 2 3	∞ ε. 4	1 2	FY 1999 2 3	4
Evaluate digital display, controls and diagnostics in 60kW set Test commercial state-of-the-art technologies for insertion to FY 99 buy Initial lightweight engine evaluation Complete lightweight engine evaluations Complete permanent magnet generator evaluation		**		×		×			×	×
* Milestone Complete										
Project DG11			Page 6 of 30 Pages	10 Pages			Exhibi	Exhibit R-2 (PE 0603804A)	03804A)	
			588							Item 59





RDT&E PROGRAM ELEMENT/	/PROJECT	COST BREAKDOWN (R-3)	REAKDO	OWN (R-	3)	DATE F (February 1997	997
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603804A Logis Advanced Deve	PE NUMBER AND TITLE 0603804A Logistics and Advanced Development	tics and E	PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment Advanced Development	g Equipm	1	РРОЈЕСТ DG11
A. Project Cost Breakdown Hardware Development Test and Evaluation Government Engineering and Support Government Program Support SBIR/STTR	FY 1996 99 50 42 25 25		FY 1997 90 73 21 25 4 213	EY 1998 44 125 25 20 214	FY 1999 962 59 200 100 50 1371			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	ng Project ty Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations CPFF/TBD 2Q96 SBIR/STTR Support and Management Organizations: None	00 200		216	209	214	1159	Cont	1798
Test and Evaluation Organizations CECOM In-House Various						212	Cont	212
Government Furnished Property: None			Č	Č		0311		1000
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			216	213	214	212 1371		1802 212 2014
Project DG11	Pa	Page 7 of 30 Pages	sa		Exh	ibit R-3 (PE	Exhibit R-3 (PE 0603804A)	Item 59

RDT&E BUDGET ITEM JUST	FEM JUS		TION S	IFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060 Ad	PENUMBER AND TITLE 0603804A Logistics and Engineering Equipment Advanced Development	ппс ogistics evelopm	and Eng	ineering	Equipme		PROJECT DG14
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DG14 Logistics Support Equipment Advanced Development	92	86	96	86	105	101	103	100	Continuing	Continuing
A. Mission Description and Justification: This program supports advanced development of new and improved technologies for logistics support equipment such as materiel handling equipment (MHE).	program supp	orts advance	ed developm	ent of new a	nd improved	technologie	s for logistic	ss support eq	uipment suc	
Acquisition Strategy: Develop engineering prototype and award investigation and requests for proposals (RFPs) from industry.	type and awar m industry.		ve contract f	competitive contract for production or select non-developmental item (NDI) equipment based on market	n or select no	on-developm	ental item (NDI) equipm	ent based or	n market

FY 1996 Accomplishments:

- Initiated contract package for Visibility Improvements for Forklift Carriages (VIC). 38 54 92
 - Initiated VIC test.
- Total

FY 1997 Planned Program:

- Conduct technical testing of VIC prototypes. 42 42 42 86 86
- Initiate materiel change management documentation for VIC. Small Business Innovation Research/Small Business Technology transfer (SBIR/STTR) Program
 - Total

FY 1998 Planned Program:

- Conduct market survey for Lightweight Container Handlers. 41 55 96
- Complete materiel change management documentation for VIC.
- Total

FY 1999 Planned Program:

- Initiate preparation of acquisition package for Light Weight Container Handlers. 98 98

Total

Project DG14

Page 8 of 30 Pages



Exhibit R-2 (PE 0603804A)



RDT&E BUDGET ITEM JUS	JUSTIFIC,	TIFICATION SHEET (R-2 Exhibit)	IEET (R	-2 Exhib	oit)		DATE Feb	February 1997	7
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NU 060; Adv	PE NUMBER AND TITLE 0603804A Logic Advanced Deve	D™LE Logistics and Development	PENUMBER AND TITLE 0603804A Logistics and Engineering Equipment Advanced Development	eering	⊑quipmer	ı	РRОЈЕСТ DG14
B. Project Change SummaryFY 1996FY 1997FY 1998FY 1999FY 1997 President's Budget958887Appropriated Value-5869698Adjustments to Appropriated Value-5869698FY 1998 Pres Bud Request92869698Change Summary Explanation: Funding increase (+8 in FY 1998 and +11 in FY 1999) reprogrammed into this project for acceleration of the Lightweight Container Handlers effort.	FY 1996 95 97 -5 92 Y 1998 and +11 in	996 FY 95 97 -5 92 in FY 1999) re	FY 1997 88 86 86 86 9) reprogrammed	FY 1998 88 96 I into this pr	FY 1999 87 98 oject for accel	leration of	the Lightwei	ght Container	
El	FY 19	97 EX 1998 88 4829	FY 1999 100	FY 2000 105	FY 2001 102	FY 2002 103	FY 2003 101	To Compl Cont	Total Cost Cont
OPA 3, M41200, Truck Fork Lift, DE, PT, RT OPA 3, MA8600, Items Less Than \$2.0M (MHE) OPA 3, M41800, All Terrain Lifting Articulated System	10587 2754 2664 13640 15941	4 1724 1 3554	24396 1715 10498	35774 1854 10505	50181 1843 10510	16863 1984 11903	16894 1988 23851	Cont	Cont
D. Schedule Profile 1 2 Conduct CCR Milestone II Contract for Visibility Improvements for Forklift Carriages (VIC) Complete testing of VIC prototypes Initiate materiel change management documentation for VIC Complete materiel change management Meight Container Handlers * Milestones Completed	FY 1996 2 3 4 X* X*	FY 1997 1 2 3 X X Page 9 of 30 Pages	FY 1997 2 3 X X F30 Pages	4 X	FY 1998 2 3		FY 1999 4 1 2 3 X X Exhibit R-2 (PE 0603804A)	FY 1999 2 3 3 303804A)	4
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	CT COST	BREAKD	OWN (R-	3)	DATE Fe	February 1997	997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AN 0603804A Advanced		отпте Logistics and Engineering Equipment Development	ngineerin	g Equipm	ient -	РРОЈЕСТ DG14
eakdown eent	FY 1996 E	FY 1997	FY 1998	FY 1999			
Test and Evaluation Government Engineering and Support Government Program Support SBIR/STTR	38	44 44 4 64 86 7	55 41 96	58 40 88 98	~		
B. Budget Acquisition History and Planning Information							
Contract Method/Type Award or Performing or Funding Obligation Activity Vehicle Date EAC ment Organizations In-House	Project Total Office Prior to EAC FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Contractor - 1 BD Test and Evaluation Organizations TARDEC In-House Various TECOM SBIR/STTR	913	92	8 2	96	86	Cont	1283 259 2
Government Furnished Property: None							
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	1172	92	98 98	96 96	8 6		1544
Project DG14	Page 10 of 30 Pages	Pages		Exh	Exhibit R-3 (PE 0603804A)	0603804A)	
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-	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	FIFICATION SHEET (R-2 Exhibit)	HEET (R	-2 Exhi	bit)		DATE Fe l	February 1997	766
BUDGET ACTIVITY 4 - Demonstrat	BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060 Adv	PE NUMBER AND TITLE 0603804A Logis Advanced Deve	PE NUMBER AND TITLE 0603804A Logistics and Advanced Development	PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment Advanced Development	ineering	Equipme	•	PROJECT · DK39
ŏ	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DK39 General Suppor Development	General Support Equipment Advanced Development	707	851	1689	1809	1980	2103	2424	2431	Continuing	Continuing
A. Mission Descript control requirements.	A. Mission Description and Justification: Develop and demonstrate the potential of prototype equipment to satisfy water purification, maintenance and environmental control requirements.	op and demoi	nstrate the p	otential of pr	rototype equ	ipment to sa	tisfy water p	urification, 1	naintenance	and environ	mental
Acquisition Strategy	Acquisition Strategy: Transition to development of engineering prototypes or select Non-Developmental Item based on market survey and proposals from industry.	f engineering	prototypes	or select No	n-Developm	ental Item ba	ased on mark	cet survey ar	ıd proposals	from indust	٦٧.
FY 1996 Accomplishments:	ıments:										
• 171 • 150	Investigated commercial technology applicable to 9K British Thermal Units-Heat (BTUH) Environmental Control Unit (ECU). Conducted Milestone VII IPR for the Lightweight Water Purifier (LWP).	nology application for the Light	able to 9K I	British Therr er Purifier (I	nal Units-Ho LWP).	eat (BTUH)	Environmen	tal Control U	Jnit (ECU).		
161	Prepared contract package for design/fabrication of prototype LWP. Completed evaluation of commercially available LWP.	· design/fabri mercially ava	cation of pro	ototype LWF	· •						
Total 707	•	`									
FY 1997 Planned Program:	ogram:										
164	Select components and initial ECU system design.	ECU system	design.								
• 450	Design and tabricate prototype LWP. Initiate Pre-Production Oualification Testing (PPOT) and Initial Operational Test and Evaluation (IOTE) of LWP.	e LWP. Ication Testii	ıg (PPOT) a	nd Initial Or	perational Te	est and Evalu	nation (IOTE	of LWP.			
06	Complete market survey of commercial packaged water units and conduct Milestone I/II IPR for PWS.	ommercial pa	ckaged wate	er units and c	conduct Mile	stone I/II IP	R for PWS.				
• 21 Total 851	Small Business Innovation Research/Small	search/Small		Business Technology Transter (SBIR/STTR) Program	ransfer (SBI	R/STTR) Pr	ogram				
FV 1998 Planned Program:											
491	Investigate commercial technology applicable to 9K BTUH ECU and large diesel heaters (250K+ BTUH).	ology applica	ble to 9K B'	TUH ECU a	nd large dies	sel heaters (2	50K+BTUF	Ŧ.			
300	Complete PQT and IOTE of LWP.	.WP.		Co., 44.0 I W.D.							
628	Design and build EMD prototype PWS.	u type classii voe PWS.		(general) for the LWF.	_						
• 50	Initiate preparation of LWP production contract.	roduction cor	ıtract.								
Total 1689											
Project DK39				Page 11 of 30 Pages	30 Pages			Exhibi	Exhibit R-2 (PE 0603804A)	603804A)	
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RDT&E BUDGET ITEM JUST	SOF WE	TIFICAT	HS NOI	IIFICATION SHEET (R-2 Exhibit)	2 Exhit	oit)		DATE Feb	February 1997	7
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NUI 0603 Adva	PE NUMBER AND TITLE 0603804A Logistics and Advanced Development	TLE ogistics a velopme	and Engi ent	neering	PENUMBER AND TITLE 0603804A Logistics and Engineering Equipment Advanced Development		PROJECT DK39
 FY 1999 Planned Program: 400 Fabricate 9K ECU prototypes. 232 Investigate commercial technology applicable to Small Diesel Heaters (60-100K BTUH). 500 Conduct PQT and IOTE on the PWS prototype. 200 Conduct Early Development Testing (EDT) on prototype Water, Individual Purification S 227 Prepare WIPS program documentation. 250 Prepare PWS program documentation. Total 1809 	ology applica e PWS protor esting (EDT entation.	ble to Small type.) on prototy	Diesel Heatı ve Water, İnc	ers (60-100K dividual Puri	BTUH). fication Sys	ole to Small Diesel Heaters (60-100K BTUH). ype. on prototype Water, Individual Purification System (WIPS) prototype.	prototype.			
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 959 985		FY 1997 869 851	FY 1998 1449	FY 1999 1428	6) <u>8</u>			
Adjustment to Appropriated value FY 1998 Pres Bud Request		707		851	1689	1809	6(
Change Summary Explanation: Reduction in FY 1996 (-278) was reprogrammed additional RDTE requirements for water systems.	96 (-278) wa: quirements fo	s reprogrami r water syste	ned to highe :ms.	r priority req	luirements.	FY 1998 (+;	240)/FY 199	reprogrammed to higher priority requirements. FY 1998 (+240)/FY 1999 (+381) increases due to water systems.	reases due to	
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Compl	Total Cost
RDTE, 0604804.DL39, General Support Equipment Engineering Development	1319	1641	2286	2589	2247	2187	4688	4238	Cont	Cont
OPA 3, MLD3335, Items Less 1 nan \$2.0M (water Equipment) OPA 3, MF9300, Air Conditioners, Various Sizes	3083	1461	1468	4770	4637	4712	1438	1988	Cont	Cont
D. Schedule Profile Investigate commercial technology	FY 1996	*	F.	FY 1997		FY 1998	8	,1	FY 1999	
applicable to 9K BTUH ECU unit Select components and complete initial					×					
Conduct MS I/II LWP IPR		*								
Project DK39			Page 12 of 30 Pages	30 Pages			Exhibi	Exhibit R-2 (PE 0603804A)	303804A)	
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RDT&E BUDGET	ITEM JUSTIFICA	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1997	1997
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment Advanced Development	ing Equipment -	PROJECT DK39
D. Schedule Profile Prepare contract package for design/ fabrication of LWP Complete evaluation of commercially	FY 1996 X* X* X*	FY 1997 FY 1998	FY 1999	
available LWP Design/fabrication of LWP Initiate PPQT and IOTE for LWP Complete market survey and conduct MS I/II IPR for Packaged Water Systems Investigate 9K FCI I and large heafer	;	××		
technology Develop 9K ECU prototypes Investigate small diesel heater technology Complete PQT/IOTE for LWP Design and fabricate prototype PWS Initiate preparation of LWP production		× ×	× × ×	
contract Conduct MS III (Generic) IPR for LWP Conduct PQT/IOTE on PWS prototype Conduct EDT of WIPS prototype Initiate preparation of WIPS program documentation Initiate preparation of PWS program documentation to support MS III IPR			× × ×	×
* Milestones Complete				
Project DK39		Page 13 of 30 Pages	Exhibit R-2 (PE 0603804A)	
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RI	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	SRAM EL	EMENT/PR	OJECT (SOST BE	REAKDO	WN (R-	3)	DATE Fe	February 1997	26
BUDGET ACTIVITY 4 - Demonstr	вирдет АСТІVІТУ 4 - Demonstration and Validation	lidation			PE NUMBER AND TITLE 0603804A Logis Advanced Deve	AND TITLE A Logist ed Develo	ס זודנ∈ Logistics and E Development	ोमात्ट Logistics and Engineering Equipment Development	g Equipm		РRОЈЕСТ DK39
A. Project Cost Breakdown Hardware Development Program Management Support Test and Evaluation Government Engineering and Integrated Logistics Support SBIR/STTR	A. Project Cost Breakdown Hardware Development Program Management Support Test and Evaluation Government Engineering and Support Integrated Logistics Support SBIR/STTR	ort		FY 1996 318 45 25 213 106 0		FY 1997 440 60 132 148 50 21 851	FY 1998 733 60 380 373 143 0	FY 1999 794 60 550 255 150 0			
B. Budget Acquisition Hist Performing Organizations Contractor or Contra Government Metho Performing or Fun Activity Vehicl Product Development Organ Support and Management Test and Evaluation Organ	B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Activativity Vehicle Date E Product Development Organizations: None Support and Management Organizations: None	d Planning Inf Award or Obligation Date ons: None izations: None	ormation Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Miscellaneous TARDEC/	In-House	Various			317	377	181	288	329	Cont	1492
Contractors	CPFF MIPR	Mar 97 Various			118		440	650	513 15	Cont	1721
ARL	MIPR Task Order	Various May 96				15	15	15	30	Cont	75
TECOM	MIPR	Various				25	150	250	400	Cont	825
CECOM	MIPR	Various Various				30 85	30	99	247	Cont	363
ATCOM	MIPR	Various				115	. 14	50	75	Cont	254
CECOM	In-House	Various						170	150	Cont	320
Project DK39				Page	Page 14 of 30 Pages	ses		Exh	Exhibit R-3 (PE 0603804A	0603804A)	
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RC	RDT&E PROGRAM ELEMENT/PROJECT	RAM EL	EMENT/PR		COST BREAKDOWN (R-3)	REAKDC	JWN (R-	3)	DATE F(February 1997	997
BUDGET ACTIVITY 4 - Demonstration and Validation	ation and Va	lidation			PE NUMBER AND TITLE 0603804A Logis Advanced Deve	PE NUMBER AND TITLE 0603804A Logistics and Advanced Development	tics and E	PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment Advanced Development	g Equipm	ent -	PROJECT DK39
Contractor or Government Performing Activity CECOM SBIR/STTR	Contract Method/Type or Funding <u>Vehicle</u> MIPR	Award or Obligation <u>Date</u> Various	Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997.	FY 1998 130	FY 1999	Budget to Complete Cont	Total Program 130 21
Government Furnished Property: None	nished Property:	None									
Subtotal Product Develonment	Jevelonment				Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Subtotal Support and Management Subtotal Test and Evaluation Total Project	nd Management Evaluation				835	707 707	851 851	1689	1809		5891 5891
Project DK39				Pag	Page 15 of 30 Pages	Ses .			Exhibit R-3 (PE 0603804A)	0603804A)	
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	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	FION S	IFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstra	BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060 Ad	PE NUMBER AND TITLE 0603804A Logistics and Advanced Development	TITLE .ogistics levelopm	בחודוב Logistics and Engineering Equipment - Development	neering	Equipme		PROJECT DK41
J	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DK41 Petroleum, Oil Equipment Adv	Petroleum, Oil and Lubricant (POL) Distribution Equipment Advanced Development	864	872	828	824	668	892	944	946	Continuing	Continuing
A. Mission Descrip	A. Mission Description and Justification: Develop and demonstrate the potential of prototype equipment to satisfy petroleum distribution requirements.	op and demo	nstrate the p	otential of p	rototype equ	ipment to sa	tisfy petroleu	ım distributi	on requirem	ents.	
Acquisition Strateg	Acquisition Strategy: Develop engineering prototypes or select Non-Developmental Item based on market surveys and proposals from industry.	ypes or selec	t Non-Devel	opmental Ite	em based on	market surv	eys and prop	osals from i	ndustry.		
FY 1996 Accomplishments:	shments:			4 OC 755 57	() £ £	**************************************	30				
282	Conducted system analysis of petroleum quality analysis set (FQAS) function and configuration. Completed system design and initiated fabrication of PQAS technology demonstration model.	petroleum c I initiated fal	juality analys vrication of P	sis set (PQA QAS techno	s) runction a slogy demon	and configur stration moc	ation. lel.				
• 79 Total 864		ınical Data P	ackage (TDF) for Standa	ırd Army Re	fueling Syst	em (SARS) a	nd conduct	demonstratic	ons.	
FY 1997 Planned Program:	Program:										
50	Update PQAS program management documentation for Milestone II IPR.	gement docu	mentation fo	r Milestone	II IPR.						
740	_	elopment te	ting PQAS t	echnology d	ig PQAS technology demonstration model (TDM).	n model (TD	M).				
20 Total 872	Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program	esearch/Sma	ll Business T	echnology]	Fransfer (SB	IR/STTR) Pi	ogram.				
EV 1008 Dlanned Drogram.	Program.										
• 35	Coordinate PQAS program management documentation and conduct Milestone II IPR.	ianagement o	locumentatio	on and condu	act Milestone	e II IPR.					
• 170		rtable PQAS	modules for	use in forw	ard areas.						
95		irveillance L	aboratory (P	QSL) progra	am managen	ent docume	ntation and c	onduct Mile	stone I IPR.		
424	Award contract for ultralight 350 gallons per minute (GFM) pump assembly prototype. Dranare contract nackage for POSI, technology demonstration model	350 gallons POSI techno	per miniute ((Joev demon	JPIMI) pump Stration mod	assembly pr	ototype.					
Total 850			مدار مستور								
Project DK41				Page 16 of 30 Pages	30 Pages			Exhib	Exhibit R-2 (PE 0603804A)	(603804A)	
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				,							





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SUL M	LIFICAT	HS NOI	EET (R	-2 Exhil	oit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NUI 0603 Adv	PE NUMBER AND TITLE 0603804A Logis Advanced Deve	PE NUMBER AND TITLE 0603804A Logistics and Advanced Development	and Engi ent	ineering	וחדור ב Logistics and Engineering Equipment Development		PROJECT DK41
 FY 1999 Planned Program: 80 Continue development of ultralight 350 GPM pump assembly prototype. 744 Award PQSL contract for design, fabrication, and test. Total 824 	light 350 GP gn, fabricatic	M pump assen, and test.	embly proto	type.						
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 885 910		FY 1997 891 872	FY 1998 912	FY 1999 876	<u>876</u>			
Adjustments to Appropriated Value FY 1998 Pres Bud Request		-46 864		872	859	8	824			
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Compl	Total Cost
RDTE, 0604804.DL41, Fuels and Equipment Engineering Development OPA3, ML5330, Items Less Than \$2 million	1135	1011	1071	1081	1057	1052	1306	1314	Cont	Cont
(POL) OPA3, M90800, Hoseline Outfit Fuel Handling	0	0	0	814	2672	2672	2091	1745	Cont	Cont
D. Schedule Profile	FY 1996 2 3	4	FY 1	FY 1997 2 3	4	FY 1998 2 3)8 3 4	1 E	FY 1999 2 3	4
Conduct system analysis of PQAS Complete SARS performance TDP and conduct demonstrations Initiate fabrication of PQAS tech demo	**	*								
Prepare solicitation package for PQAS FMD Phase					×					
Complete fabrication and testing of PQAS technology demonstration model					×					
Update PQAS Program Management Documents (PMD) for Milestone II IPR					×					
Project DK41		I	Page 17 of 30 Pages	0 Pages			Exhibi	Exhibit R-2 (PE 0603804A)	03804A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997	
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment - Advanced Development	PROJECT gineering Equipment - DK41	т -
D. Schedule Profile	Ξ,	FY 1999	
Conduct PQAS Milestone II IPR and coordinate		4	
Demonstrate feasibility of portable PQAS modules for use in forward areas		×	
Prepare PMD for PQSL and conduct Milestone I IPR	×		
Award contract for ultralight 350 GPM	×		
Prepare contract package for PQSL TDM Continue development of ultralight 350	×	×	, <u>,</u>
GFM pump Award contract for design fabrication and test of PQSL TDM		×	
*Milestone Completed			
Project DK41	Page 18 of 30 Pages	Exhibit R-2 (PE 0603804A)	\neg
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RD	RDT&E PROGRAM ELEMENT/F	SRAM EL	EMENT/PRO	PROJECT (SOST BF	SEAKDO	COST BREAKDOWN (R-3)	3)	DATE F (February 1997	997
BUDGET ACTIVITY 4 - Demonstration and Validation	tion and Va	lidation			PE NUMBER AND TITLE 0603804A Logis Advanced Deve	PE NUMBER AND TITLE 0603804A Logistics and Advanced Development	tics and E	PENUMBER AND TITLE 0603804A Logistics and Engineering Equipment Advanced Development	g Equipm	,	PROJECT DK41
A. Project Cost Breakdown Hardware Development Test and Evaluation Government Engineering and Support Government Program Support SBIR/STTR Total	eakdown nent ering and Suppo m Support),t		FY 1996 669 50 95 50 50 0	FY	FY 1997 667 50 85 50 20 872	FY 1998 470 63 276 50 0 859	FY 1999 511 87 176 50 0			
B. Budget Acquisition History and Planning Information	tion History and	d Planning Inf	<u>ormation</u>								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations: TARDEC Support and Management Organizations: ARCOM, TACOM Test and Evaluation Organizations: TECOM, TEXCOM Miscellaneous:	izations Contract Method/Type or Funding Vehicle ent Organization gement Organi.	Award or Obligation <u>Date</u> nns: TARDEC zations: ARL,	Performing Activity <u>EAC</u> , ATCOM, TACOM	Project Office <u>EAC</u> A	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
TARDEC ETG TECOM	In-House CPFF MIPR	Various Sep 95			546 819	142	196 511 120	273 151 50	178	Cont	1335 2066 170
ARL ATCOM	MIPR MIPR	Feb 96 Mar 96			52 30	15 50	15 10	15	10	Cont	107
Contractor Contractor SBIR/STTR	MIPK CPFF CPFF	Mar 96 Dec 97 Dec 98				7/	20	370	56 580	Cont	72 426 580 20
Government Furnished Property: None	shed Property:	None		Page	Page 19 of 30 Pages	S		П Х	Exhibit R-3 (PE 0603804A)	0603804A)	
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BR	EAKDO	WN (R-3	(2)	DATE Fe	February 1997	766
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603804A Logistics and Advanced Development	A Logisti d Develo	PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment - Advanced Development	ngineerin	g Equipm		PROJECT DK41
Subtotal Product Development	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Subtotal Support and Management Subtotal Test and Evaluation Total Project	1447 1447	864	872 872	859	824		4866
Project DK41	Page 20 of 30 Pages	es		EXC	EXNIDIT K-3 (PE UDU38U4A)	U003804A)	5

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	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SE	HEET (R	FIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 19	1997
BUDGET ACTIVITY 4 - Demonstrat				PE NU 060 Adv	PE NUMBER AND TITLE 0603804A Logis Advanced Deve	PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment Advanced Development	and Engi ent	neering	Equipme	1	РRОЈЕСТ D266
Ö	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D266 Airdrop Equipm	Airdrop Equipment Advanced Development	1116	1414	1359	1353	1336	1503	4864	4700	Continuing	Continuing
A. Mission Description cargo airdrop capabiliti aircrew and equipment.	A. Mission Description and Justification: Conduct accelerated cargo airdrop capabilities over a range of altitudes with emphasis aircrew and equipment.	ct accelerate	d demonstra on improv	ition and vali	idation of aii greater pre	demonstration and validation of airdrop systems and equipment to provide advanced offset personnel and on improved safety and greater precision, balanced with reduced vulnerability of personnel, aircraft,	s and equipn	nent to proviuced vulnera	ide advancec ıbility of per	l offset perse sonnel, aircr	onnel and aft,
Acquisition Strateg	Acquisition Strategy: Single cycle accelerated development with type classification directly upon successful conclusion of Demonstration/Validation development.	elopment wi	th type class	sification dir	ectly upon s	uccessful cor	ıclusion of L	emonstratic	on/Validatior	ı developme	nt.
FY 1996 Accomplishments: • 1116 Conduc Total 1116	hments: Conduct technical testing of the Enhanced Container Delivery System (ECDS).	he Enhanced	Container I	Delivery Syst	tem (ECDS)	·					
FY 1997 Planned Program: • 680 Initiate • 300 Award Corps.	rogram: Initiate EPJD effort; component development, initial developmental testing. Award contract for the design and trade off analysis of Advance Tactical Pa Corps. Increases safety and lethality of Force XXI Airborne Forces.	ent developm 1 and trade of ethality of Fc	ent, initial c f analysis o rce XXI Ai	levelopment f Advance Ta rborne Force	al testing. actical Parac s.	nt, initial developmental testing. analysis of Advance Tactical Parachute System (ATPS) candidates. Number 1 priority of the XVIII ABN ce XXI Airborne Forces.	(ATPS) can	didates. Nu	mber 1 prior	city of the X	/III ABN
• 399 • 35 Total 1414	Conduct user testing for ECDS Small Business Innovation Research/Small	search/Smal	l Business 1	Fechnology 1	fransfer (SB	Business Technology Transfer (SBIR/STTR) Program	ogram				
FY 1998 Planned Program: • 1359 Monito Total 1359	rogram: Monitor contract development efforts and conduct component level test and evaluation of ATPS.	ıt efforts and	conduct coi	nponent leve	الله test and ev	aluation of $ extit{A}$	ATPS.				
FY 1999 Planned Program:	'rogram: Conduct developmental testing of ATPS; initiate operational testing. Conduct market survey for 500 feet Low Velocity Aerial Delivery System (LVADS) Heavy	ig of ATPS; i	nitiate oper /elocity Ae	ational testin rial Delivery	g. System (LV	'ADS) Heavy	>				
Project D266		!		Page 21 of 30 Pages	30 Pages			Exhib	Exhibit R-2 (PE 0603804A)	0603804A)	
				603							Item 59

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	USTIFICAT	ION SH	EET (R	-2 Exhit	oit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUN 0603 Adva	PE NUMBER AND TITLE 0603804A Logistics and Advanced Development	ı⊤∟E ogistics a evelopme	and Engi	neering	PENUMBER AND TITLE O603804A Logistics and Engineering Equipment Advanced Development	1	Р R ОЈЕСТ D266
 B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request 	FY 1996 1452 1493 -377	FY	<u>1997</u> 1444 1414 1414	FY 1998 1452 1359	FY 1999 1452 1353	52 53 53			
Change Summary Explanation: Funding reprogrammed (-336) to a higher priority in FY 1996.	36) to a higher pri	ority in FY 1	1996.						
FY	1996 FY 1997 1116 1414	FY 1998 1359	FY 1999 1354	FX 2000 1380	FY 2001 1371	<u>FY 2002</u> 4864	FY 2003 4701	To Compl Cont	Total Cost Cont
OPA 3, R10903, Enhanced Container Delivery System OPA 3, R10904, Advanced Tactical Parachute System				5270	14924				5270
1 g of ECDS	FY 1996 2 3 4	FY 1	FY 1997 2 3 X X	4	FY 1998 2 3	8 8 3 4	1 2 F	FY 1999 2 3	4
Award contract for ATPS Conduct user test for ECDS Design, fabricate and conduct component testing of ATPS Conduct developmental testing of ATPS Begin operational testing of ATPS			××			×	×		×
Project D266	I	Page 22 of 30 Pages	0 Pages			Exhibi	Exhibit R-2 (PE 0603804A)	03804A)	7.
		707							Item 50





RDT&E PROGRAM ELEMENT/PRO	PROJECT C	SOST BI	REAKD	COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	266
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603804A Logis Advanced Deve	PE NUMBER AND TITLE 0603804A Logistics and Advanced Development	tics and E	PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment Advanced Development	g Equipm		РRОЈЕСТ D266
A. Project Cost Breakdown Primary Hardware Development Test and Evaluation Government Support and Management SBIR/STTR Total	FY 1996 574 467 75	FY	FY 1997 969 335 75 35 1414	FY 1998 934 350 75 1359	EY 1999 930 356 67 1353			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations SSCOM In-House QMSCH/OGA MIPR		23711	594 0	561 408	285 649	281 649	Cont	25432 1724
Support and Management Organizations SSCOM Test and Evaluation Organizations		643	75	75	75	29	Cont	935
TECOM/OGA SSCOM SBIR/STTR		1916	322 125	300 35 35	300	300	Cont	3138 386 35
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		23729 643 2036 26408	594 75 447 1116	969 75 370 1414	934 75 350 1359	930 67 356 1353		27156 935 3559 31650
Project D266	Page	Page 23 of 30 Pages	ses		Exh	Exhibit R-3 (PE 0603804A)	0603804A)	
		605						Item 59

	RDT&E BUDGET ITEM JUST	EM JUS		TION SH	HEET (R	FICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	197
вироет АстіvітУ 4 - Demonstra t	BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060 Adv	PE NUMBER AND TITLE 0603804A Logis Advanced Deve	PE NUMBER AND TITLE 0603804A Logistics and Advanced Development	PENUMBER AND TITLE O603804A Logistics and Engineering Equipment Advanced Development	ineering	Equipme		РРОЈЕСТ D428
0	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D428 Rigid Wall Shel	Rigid Wall Shelter Advanced Development	2464	3868	2431	870	983	977	1970	1977	Continuing	Continuing
A. Mission Descrip communications and battlefield systems, n	A. Mission Description and Justification: Develop a family of tactical rigid wall shelters which enhances soldier survivability and sustainability of command, control, communications and intelligence. Shelters provide highly mobile, joint service platforms for the digitization of the battlefield, housing many critical vehicle-mounted battlefield systems, medical critical care in a Chemical/Biological (C/B) environment and high tech maintenance.	p a family o nghly mobil al/Biologica	f tactical rig e, joint servi l (C/B) envi	id wall shelte ice platforms ronment and	ers which en s for the digi l high tech rr	hances soldi tization of th taintenance.	er survivabil 1e battlefield,	lity and suste , housing ma	unability of a	command, c	ontrol, ited
Acquisition Strateg	Acquisition Strategy: Developments transition to Engineering and	Ingineering		cturing Deve	lopment and	Manufacturing Development and then to production.	duction.				
FY 1996 Accomplishments: • 788 Complements	hments: Completed development of Cargo Bed Cover. M105 CBC and redesign 2.1/2 ton truck CBC	rgo Bed Co		ariants for H	igh Mobility	' Multi-Purp	(CBC) variants for High Mobility Multi-Purpose Wheeled Vehicle (HMMWV), completed testing of	Vehicle (HI	MMWV), co	mpleted test	ing of
• 1676	Completed technical testing of Large Standard Integrated Command Post System (SICPS) Shelter, and began fabrication of Operational Test (OT) shelters	Large Stan	dard Integrat	ed Comman	d Post Syste	m (SICPS) s	shelter, and k	ogan fabrica	ation of Oper	rational Test	(OT)
Total 2464											
FY 1997 Planned Program: 856 Comple	rogram: Complete development of M105 CBC and award design/fabrication contract for fourth CBC variant based user survey. Complete retesting and	05 CBC and	award desig	n/fabricatior	ι contract fo	r fourth CBC	y variant base	ed user surve	ey. Complet	te retesting a	pu
• 1405 • 1513	development of 2 1/2 ton truck CBC. Begin effort to apply novel signature management techniques to the HMMWV-mounted SICPS shelter to avoid visual, thermal, radar and IR detection Begin effort to develop a survivable SICPS shelter that provides ballistic protection, protection from directed energy and fuel air weapons, and	K CBC. nature mana ivable SICPS	gement tech s shelter that	niques to the provides ba	e HMMWV. Ilistic protec	mounted SI tion, protect	CPS shelter tion from dire	to avoid visu acted energy	ial, thermal, and fuel air	radar and IR weapons, at	detection
• 94 Total 3868	enhanced NBC protection. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program	search/Smal	Business T	echnology T	ransfer (SBI	R/STTR) Pr	ogram				
FY 1998 Planned Program:	rogram: Award contract for the design and fabrication	and fahricat	on of the Su	of the Survivable SICPS Shelter	PS Shelter						
545	Complete design, fabrication, and testing of the fourth variant CBC	and testing c	f the fourth	variant CBC							
• 338 Total 2431	Award development contract for a Family of Kigid/Soft (K/S) Hybrid Shelfer.	or a Family	ot Kigid/Sof	t (K/S) Hybr	rid Shelter.						
Project D428				Page 24 of 30 Pages	30 Pages			Exhibil	Exhibit R-2 (PE 0603804A)	603804A)	







RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R	-2 Exhib	it)	DATE Febru	February 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603804A Logistics and Advanced Development	тге ogistics a svelopme	PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment - Advanced Development	Equipment	PROJECT D428
 FY 1999 Planned Program: 210 Complete development of the fourth CBC variant. 660 Complete design and conduct fabrication of R/S Hybrid Shelters. Total 870 	elters.				,
XI	FY 1997 3951 3868	FY 1998 2594	FY 1999 926		
Adjustments to Appropriated Value FY 1998 Pres Bud Request 2464	3868	2431	870		
Change Summary Explanation: In FY 1996 (-1018) funding was reprogrammed to higher priority requirements.	to higher priority req	uirements.			
C. Other Program Funding Summary	EV 1009 EV 1000	EV 2000	EV 2001 FV 2002	EV 2003	To Total
3193		1159			
D. Schedule Profile	FY 1997	-	FY 1998	FY 1	FY 1999
n		- -	7		
Complete development of HMMWV CBC Complete technical testing of the Large SICPS Shelter					
Complete development of 2 1/2 ton truck		×			
Begin development of reduced Signature SICPS Shelter	×				
Design and test Survivable Command Post Test fourth variant CBC			× ×		
	Page 25 of 30 Pages			Exhibit R-2 (PE 0603804A)	304A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997	266
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment - Advanced Development		PROJECT D428
D. Schedule Profile FY 1996	FY 1997 FY	FY 1998 FY 1999	4
٦	×		· ×
*Milestone completed			
Project D428	Page 26 of 30 Pages	Exhibit R-2 (PE 0603804A)	
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PE NUMBER AND TITLE Advanced Development PE NUMBER AND TITLE Advanced Development	and Engineering Equipment 1998	et to plete Cont	D428 D428 Total Program 15475
roject Cost Breakdown FV 1996 FV 1996 FV 1997 FV 1999 FV 1998 FV 1998 </th <th>FY 1999 270 200 400 870 FY 1998 FY 10 0 421</th> <th>Budg</th> <th>Total Program 15475</th>	FY 1999 270 200 400 870 FY 1998 FY 10 0 421	Budg	Total Program 15475
1806 3166 421 270 200 3100 200 3100 3100 200 3100	270 200 400 870 FY 1998 FY 1	Budg Com	Total Program 15475
am Management Support am Management Support am Management Support bde Acquisition History and Planning Information runing Organizations actor or Contract runnent Method/Type Award or Performing or Funding Or Funding Or Funding or Funding Organizations wick Development Organizations MIPR Actor or Contract runnent Method/Type Award or Performing Project Total runing Organizations wick In-House EAC EX 1996 FY 1996 FY 1997 FY 1998 Proving Office Prior to Sex Research Various Various Arious Arious Sex Research Various Arious Arious Sex Research Various Arious A	200 400 870 FY 1998 FY 1	Budg Com	Total Program 15475
184 303 1010 400 STTR 2464 3868 2431 870 In House Parious Parious EAC Parious In House Parious Parious Parious In House In House Parious In	400 870 FY 1998 FY 1 421	Budg Com	Total Program 15475
STTR State 870 FY 1998 FY 1	Budg Com	Total Program 15475	
ing Information d or Performing Sation Activity Project Office Prior to EAC FY 1996 FY 1996 FY 1997 FY 1998 sation Activity Office EAC EAC FY 1996 FY 1996 FY 1998 FY 1998 nus 14299 125 360 421 nus 16 650 600 16 650 600 1010 1010	FY 1998 FY 1	Budg Com	Total Program 15475
d or Performing Sation Project Activity Office Prior to EAC Prior to Prior to EAC FY 1996 FY 1996 FY 1998	FY 1998 FY 1	Budg Com	Total Program 15475
d or ation Performing Project Activity Project Office Prior to Office EAC Prior to Prior to Prior to Office EAC Prior to Prior to Prior to EAC FY 1996 FY 1997 FY 1998 us 14299 125 360 421 us 382 1031 2206 421 16 650 600 600 3605 184 303 1010	FY 1998 FY 1	Budg Com	Total Program 15475 3619
d or Performing Project Total action of the Project Total action Activity Office Prior to EAC FY 1996 FY 1996 FY 1997 FY 1998 at 14299 125 360 421 ans 382 1031 2206 421 action 16 650 600 action 16 650 action 16 650 600 action 16 650 action	FY 1998 FY 1	Budg Com	Total Program 15475 3619
EAC FY 1996 FY 1997 FY 1998 14299 125 360 421 382 1031 2206 16 650 600 3605 184 303 1010	FY 1998 FY 1	Com	1 Otal Program 15475 3619
14299 125 360 421 382 1031 2206 16 650 600 3605 184 303 1010	421		15475
14299 125 360 382 1031 2206 16 650 600 3605 184 303	421		15475 3619
382 1031 2206 16 650 600 3605 184 303	. 2206	Cont	3619
16 650 600 3605 184 303			
16 650 600 3605 184 303			
3605 184 303		Č	1701
3605 184 303	000	Cont	1700
3605 184 303			
Toot and Evoluction Currentizations	1010	400 Cont	5502
	•		1
TECOM MIPR 7508 474 305 1000 cbib/sttrp 94	0001	200 Cont	9487
	+6		+
Government Furnished Property: None			
14697 1806 3166	421	270	20360
ement 3605 184 303	1010	400	5502
Subtotal Test and Evaluation 1000	1000	200	9581
C+7 0000 +0+7 010C7	C +7	0/0	0.7440
Project D428 Exhibi	Exhibit R-3 (F	Exhibit R-3 (PE 0603804A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	2-2 Exhi	bit)		DATE Fel	February 1997	766
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060 Adv	PE NUMBER AND TITLE 0603804A Logis Advanced Deve	DE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment Advanced Development	and Engi ent	neering	Equipme		РRОЈЕСТ D526
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D526 Marine Orientation Log Equipment Advanced Development	0	0	0	330	1210	0	1351	703	Continuing	Continuing
A. Mission Description and Justification: This project provides advanced development of technology necessary to improve marine logistical equipment. The effort the concept design for the Landing Craft Utility (LCU) 1600 Service Life Extension Program (SLEP) will focus upon providing enhanced capabilities and reduction of Operating and Support (O&S) costs over the next several decades as well as meet Safety of Life at Sea (SOLAS) requirements.	roject provic CU) 1600 Sei everal decade	les advanced vice Life Ex	developmer tension Prog meet Safety	nt of technol gram (SLEP) of Life at Se	advanced development of technology necessary to improve marine logistical equipment. The effort for ce Life Extension Program (SLEP) will focus upon providing enhanced capabilities and reduction of as well as meet Safety of Life at Sea (SOLAS) requirements.	y to improve pon providir requirements	marine log	istical equipi capabilities	ment. The e and reductic	ffort for on of
Acquisition Strategy: RDTE followed by competitive procurement.	itive procure	nent.								
FY 1996 Planned Program: Project not funded in FY 96	FY 96									
FY 1997 Planned Program: Project not funded in FY 97	FY 97									
FY 1998 Planned Program: Project not funded in FY 98	FY 98									
 FY 1999 Planned Program: 125 Concept design effort to enhance performance of LCU 1600. 135 Concept design effort to reduce O&S costs of LCU 1600. 70 Concept design effort to satisfy new SOLAS standards. Total 330 	ance perform ice O&S cost ify new SOL.	ance of LCU s of LCU 160 AS standards.	′ 1600. 00. 3.							
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996		FY 1997 0	FY 1998 0	FY 1999 338	<u>999</u> 338			
Adjustment to Appropriated Value FY 1998 Pres Bud Request			0	0	0	33.	330			
C. Other Program Funding Summary: None										

UNCLASIFIED

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Project D526

Exhibit R-2 (PE 0603804A)



RDT&E BUDGET	ITEM JUSTIFICATI	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1997	997
вироет АСТІVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603804A Logistics and Engineering Equipment - Advanced Development		РRОЈЕСТ D526
D. Schedule Profile	FY 1996	FY 1997 FY 1998	FY 1999 4 1 2 3	4
Report/Concept Acceptance X* LCU 1600 Contract Award (Task Order) In-process Review	n		· ×	· ×
*Milestone completed				
:				
Decise D526	ď	Page 29 of 30 Pages	Exhibit R-2 (PE 0603804A)	
110001 15520		611		Item 59

RDT&E PROGRAM ELEMENT/PRO.	JECT C	OST BF	REAKDO	ROJECT COST BREAKDOWN (R-3)	3)	DATE F	February 1997	266
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603804A Logis Advanced Deve	AND TITLE A Logist d Develo	⊃тт∟E Logistics and E Development	TITLE Logistics and Engineering Equipment Development	g Equipm		РRОЈЕСТ D526
A. Project Cost Breakdown Contractor Engineering Support Program Management Support Total	FY 1996	FY 1997	<u>766</u>	FY 1998	FY 1999 304 26 330			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FX 1999	Budget to Complete	Total Program
Miscellaneous SS-FP		447				279	Cont	726
Support and Management Organizations NSWC MIPR ATCOM MIPR Test and Evaluation Organizations: None Government Furnished Property: None		318				29	Cont	347
Subtotal Product Development Subtotal Support and Management		447 387				279		726
Subtotal Test and Evaluation Total Project		834				330		1164
		,	·					
Project D526	Page	Page 30 of 30 Pages	es		Exhi	bit R-3 (PE	Exhibit R-3 (PE 0603804A)	
	á	612						Item 59





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	LEM JUS	TIFICA	TION S	HEET (R	-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060 Sys	PE NUMBER AND TITLE 0603805A Combat Service Support Control Systems Evaluation and Analysis	רודוב combat S aluation	ervice Si and Anal	upport C	ontrol		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	13228	12689	7673	7783	1860	1863	1877	1885		Continuing Continuing
D091 Combat Service Support Control System	11764	10771	5914	5997	0	0	0	0	0	136361
D246 Tactical Communications System-Advanced Development	1464	1918	1759	1786	1860	1863	1877	1885	Continuing	Continuing
										

which is a component of the Army Battle Command System (ABCS). Project D246, Tactical Communications System - Advanced Development, provides for insertion of and resource management. CSS control centers must provide a rapid decision support capability and supportive information to commanders more quickly than is possible Combat Service Support (CSS) Commander and his staff to rapidly collect, store, analyze, and disseminate CSS information to support the functions of command, control Mission Description and Budget Item Justification: Project D091, The Combat Service Support Control System, is a computer software system designed to assist the proven communications technology from program element 0602782A, Project AH92 exploratory development into advanced development. Examples of these potential with the present manual systems. This program develops the CSS battlefield functional area (BFA) node of the Army Tactical Command and Control System (ATCCS) programs are the Multiband, Multimode Radio, high power solid state amplifiers and couplers, and packet appliqués used to increase network efficiency. These efforts provide for the demonstration and validation of advanced technologies and therefore are appropriately funded in Budget Activity 4.

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Exhibit R-2 (PE 0603805A)

RDT&E BUDGET ITEM JUST	FEM JUS	TIFICA	TION SI	FIFICATION SHEET (R-2 Exhibit)	k-2 Exhi	bit)		DATE Fel	February 1997	26
BUDGET ACTIVITY 4 - Demonstration and Validation			PE N 06(PE NUMBER AND TITLE 0603805A Combat Service Support Control Systems Evaluation and Analysis	^{पाग्} ट Sombat S aluation	ervice S and Ana	upport C lysis	ontrol		РКОЈЕСТ D091
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D091 Combat Service Support Control System	11764	10771	5914	2669	0	0	0	0	0	136361

A. Mission Description and Justification: Project D091, Combat Service Support Control System. The CSSCS is a computer software system designed to assist the CSS Commander and his staff to rapidly collect, store, analyze, and disseminate CSS information to support the functions of command, control and resource management. CSS control centers must provide a rapid decision support capability and supportive information to commanders more quickly than is possible with the present manual systems. This program develops the CSS BFA node of the ATCCS, which is a component of the ABCS.

functionality, and extend CSSCS capabilities to joint, allied and coalition forces. FY 97 is a transition year, with the Version 3 TRW contract in an extension period through Acquisition Strategy: Acquisition strategy is to pursue an evolutionary development process, with program development structured to evolve over five versions. Versions 1 and 2 served as proof of principle, and provided initial division level CSS functional capability on common hardware. Version 3 builds on the capabilities of the previous versions and provides an Initial Operational Capability at Division and Corps level, to include initial horizontal interoperability with ABCS systems. Version 4 will extend 30 Sep 97. TRW will provide software maintenance and update support to CSSCS through IOTE-II, Task Force XXI and Division XXI preparation activities. Lockheed CSSCS to EAC, as well as provide added capabilities at Echelons Corps and Below (ECB). Version 5, the objective CSSCS software, will provide remaining ECB Martin Corporation (LMC) will provide training support in FY 97, and will transition to Version 4 and Version 5 software development beginning in FY 98.

FY 1996 Accomplishments:

- 5715 Continued Version 3 software development
 - 1194 Began Version 4 software development
- Continued LRIP activity in accordance with Acquisition Decision Memo at III Corps 2000
- Prepared for and conduct Army Warfighter Experiment (AWE) and Task Force XXI activities. 1055
- Prepared and conduct Version 4 Preliminary Design Review (PDR) and Critical Design Review (CDR)
 - 1000 Prepared for and begin IOTE-II

otal 11764

FY 1997 Planned Program:

- 5007 Complete Version 3 software development
- 537 Continue Version 4 software development
 - 694 Begin Version 5 development
- 1000 Conclude IOTE-II

Project D091

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Exhibit R-2 (PE 0603805A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TIFICATION	HS NC	EET (R	-2 Exhib)it)		DATE Feb i	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUN 0603 Syst	PE NUMBER AND TITLE 0603805A Com Systems Evalua	PENUMBER AND TITLE 0603805A Combat Service Support Control Systems Evaluation and Analysis	ervice Su	ipport Co ysis	ontrol	Ŗ O	РRОЈЕСТ D091
 FY 1997 Planned Program: (continued) 1200 Prepare for and conduct Army Warfighter Experiment (AWE), Task Force XXI and Division XX activities 800 Prepare documentation and conduct ASARC III (Full Scale Production (FSP)) and C3I Committee Review 533 Begin fielding of Version 3 750 Begin Version 4 Limited User Test (LUT) 250 Small Business Innovation Research/Small Business Technical Transfer (SBIR/STTR) Total 10771 	Experiment (AV C III (Full Scal	WE), Task le Producti nical Trans	Force XXI on (FSP)) a sfer (SBIR/S	and Divisior nd C31 Com: STTR)	1 XX activit mittee Revi	ies ew			
FY 1998 Planned Program:					·				
FY 1999 Planned Program: • 5897 Complete Version 5 development • 100 Complete FOT&E Total 5997									
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	EY 1996 12054 12176 -412 11764	EX 1997 11119 10884 10771	<u>(1997</u> 111119 10884 10771	FY 1998 5937 5914	FY 1999 5936 5997	66 29 70 70 70 70 70 70 70 70 70 70 70 70 70			
C. Other Program Funding Summary FY 1996 Procurement, OPA 2 (W34600) 4547 Spares (MA9706/BS9706) 450		FY 1998 5759 293	FY 1999 5740 187	FY 2000 13845 178	FY 2001 13749 177	FY 2002 14018 189	FX 2003 14674 189	To Compl 31200 200	Total Cost 115254 2747
Project D091	P	Page 3 of 9 Pages	Pages			Exhibit	Exhibit R-2 (PE 0603805A)	03805A)	0.7

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2	Exhibit)			DATE Fe	February 1997	997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603805A Combat Service Support Control Systems Evaluation and Analysis	bat Servition and	ice Sup Analys	port Co	ontrol		Р R ОЈЕСТ D091
D. Schedule Profile	FY 1997	-	FY 1998	4	-	FY 1999 2 3	4
¬ * *	n ×××	- ××		•	-		
Project D091 P	Page 4 of 9 Pages			Exhibi	t R-2 (PE (Exhibit R-2 (PE 0603805A)	
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RD.	RDT&E PROGRAM ELEMENT/	SRAM ELE		PROJECT (SOST BF	REAKDO	COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	166
BUDGET ACTIVITY 4 - Demonstration and Validation	ition and Va	lidation			PE NUMBER AND TITLE 0603805A Com Systems Evalua	AND TITLE A Comb Evaluati	PE NUMBER AND TITLE 0603805A Combat Service Suppo Systems Evaluation and Analysis	PE NUMBER AND TITLE 0603805A Combat Service Support Control Systems Evaluation and Analysis	Control		РКОЈЕСТ D091
A. Project Cost Breakdown Software Development Program Management Support COE/CHS/Common Support Operational Test and Evaluation SBIR/STTR Total	eakdown ent nt Support Support I Evaluation			EY 1996 6909 2555 1800 500	EY 1	71997 7407 2004 733 377 250 10771	EY 1998 4289 1200 200 225 5914	EY 1999 4597 1200 100 100			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Activity Activity Date E	tion History and izations Contract Method/Type or Funding Vehicle	d Planning Info Award or Obligation Date	ormation Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
TRW C/CPFF 7 TRW C/CPAF 2 Lockheed Martin C/CPAF 1 COE/Com Spt MIPR SBIR/STTR	C/CPFF C/CPAF C/CPAF MIPR	7/87 2/91 12/94	15731 65354 TBD	15731 65354 TBD	15731 53432 1500 3990	0 5715 1194 1300	0 6107 1105 445 250	4289	4597	0000	15731 65254 12685 6035 250
Support and Management Organizations PM CSSCS CECOM SDC-LEE SDC-HUACHUCA MIPR EER/VITRO/ MIPR	MIPR MIPR MIPR	zations zations			13451 910 136 485 2511	659 304 265 165 1162	495 160 265 100 1300	275 70 130 50 675	275 70 130 50 675	0000	15155 1514 926 850 6323
Test and Evaluation Organizations GOVT MIPR EPG/CAC MIPR OPTEC	n Organizations MIPR MIPR	ø			2289 413 1558	310 170 20	165 159 20	150 75	100	0 0 0	3014 817 1598
Project D091				Pag	Page 5 of 9 Pages	S;		Exhi	Exhibit R-3 (PE 0603805A)	0603805A)	Item 60

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	T/PROJECT COST B	REAKDO	OWN (R-	3)	DATE	February 1997	997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER 0603800 System	PE NUMBER AND TITLE 0603805A Combat Service Support Control Systems Evaluation and Analysis	at Servica ion and A	e Support			РКОЈЕСТ D091
Government Furnished Property Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Date	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Froduct Development Property CHS-TRW/LMC MIPR Support and Management Property: None Test and Evaluation Property CHS-III CORPS MIPR	3101	500	200			0	3801
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	77754 17493 6668 101915	8709 2555 500 11764	8107 2320 344 10771	4489 1200 225 5914	4697 1200 100 5997		103756 24768 7837 136361
	and Of O Accord			Ú	Evhihit D 2 (DE ORO390A)	06030060	
Project D091	rage 0 of 9 rages	ર રહ્ય		Ĭ	אן כ-א ווסווי	(Acoocoon	Item 60



	RDT&E BUDGET ITEM JUS	EM JUS	TIFICA.	TIFICATION SHEET (R-2 Exhibit)	HEET (R	-2 Exhi	bit)		DATE Fet	February 1997	167
BUDGET ACTIVITY 4 - Demonstrati	BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060 Sys	PE NUMBER AND TITLE 0603805A Com Systems Evalua	⊓⊓∟E Sombat S aluation	PE NUMBER AND TITLE 0603805A Combat Service Support Control Systems Evaluation and Analysis	upport C	ontrol	4 1	РРОЈЕСТ D246
S	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D246 Tactical Commu Development	Tactical Communications System-Advanced Development	1464	1918	1759	1786	1860	1863	1877	1885	Continuing	Continuing
A. Mission Description and Budget Iten integration and testing of a mix of mature communications infrastructure at Corps an MSE TPN, etc.) and emerging communicatectical equivalent of the information high and leverage commercial network standard dynamically route data to hosts. It will be integrating, and testing the Tactical Internation leading up to Force XXI.	A. Mission Description and Budget Item Justification. This project will validate the new Tactical Internet capability required for Force XXI. It provides definition, integration and testing of a mix of mature and prototype products which will be used to develop a Tactical Internet capability. The Tactical Internet will be the primary data communications infrastructure at Corps and below for Force XXI and will revolve around interconnecting a mix of existing (e.g.: SINCGARS, SINCGARS SIP, EPLRS, MSE TPN, etc.) and emerging communications devices using gateways and routers. Gateways will also provide the link to strategic levels. This capability will result in the tactical equivalent of the information highway and will support key battlefield functional areas to include logistics reporting, telemedicine, etc. The Tactical Internet will use and leverage commercial network standards and products. The "Internet Protocol" (IP) suite will be used to provide seamless communications with the capability to dynamically route data to hosts. It will be designed to facilitate technology insertion. The focus of this project will be to reduce the technical risk by assembling, integrating, and testing the Tactical Internet components prior to TF XXI, Division XXI, and Corps XXI. New services and components will be added and tested as required for each iteration leading up to Force XXI.	tion This praype products or Force XX. ces using gal vill support k ducts. The "to facilitate to ents prior to	oject will va s which will I and will re ieways and r ey battlefiel Internet Pro echnology in TF XXI, Di	lidate the ne be used to de volve around couters. Gate de functional tocol " (IP) s asertion. The vision XXI, a	w Tactical I evelop a Tac interconne eways will a areas to incl uite will be e focus of th and Corps X	nternet capal circal Interne cting a mix c lso provide t ude logistics used to provise provise project will project will new see XI. New see	bility require t capability. of existing (e he link to str s reporting, to ide seamless ill be to redurices and co	d for Force The Tactics g.: SINCG ategic levels slemedicine, communica ce the techni	oject will validate the new Tactical Internet capability required for Force XXI. It provides definition, which will be used to develop a Tactical Internet capability. The Tactical Internet will be the primary defended will revolve around interconnecting a mix of existing (e.g.: SINCGARS, SINCGARS SIP, EPLRS, eways and routers. Gateways will also provide the link to strategic levels. This capability will result in the by battlefield functional areas to include logistics reporting, telemedicine, etc. The Tactical Internet will unternet Protocol " (IP) suite will be used to provide seamless communications with the capability to echnology insertion. The focus of this project will be to reduce the technical risk by assembling, TF XXI, Division XXI, and Corps XXI. New services and components will be added and tested as required.	rides definiti II be the priu 3ARS SIP, E ility will res ctical Interne te capability ssembling, and tested a	on, nary data PLRS, alt in the t will use to
Acquisition Strategy	Acquisition Strategy: The efforts funded in this project are non-system specific, therefore no acquisition strategy is provided.	oject are non	-system spe	cific, therefo	re no acquis	ition strategy	y is provided				
FY 1996 Accomplishments:	Established Tactical Internet Testbed and baseline for the performance of hardware, software and protocols Conducted near term experiments to address the internet architecture for the Task Force (TF) XXI Exercise Provided technical support for the Task Force XXI field testing and training Began incorporation of Digital Battlefield Communications (DBC)/Battlefield Information Transmission Sytactical internet	Testbed and lents to addrer the Task For I Battlefield	baseline for ss the interr rrce XXI fie Communica	the performs net architectu Id testing an ntions (DBC)	ance of hard ne for the Ta d training //Battlefield	ware, softwa ask Force (T Information	re and proto F) XXI Exer Transmissio	cols cise n System (B	oaseline for the performance of hardware, software and protocols ss the internet architecture for the Task Force (TF) XXI Exercise roce XXI field testing and training Communications (DBC)/Battlefield Information Transmission System (BITS) near term products into the	rm products	
FY 1997 Planned Program:	ogram: Provide on-site tactical internet technical support at Ft Hood and Ft Irwin for TF XXI Insert new technologies and expand the testbed to address requirements for division size networks Develop and provide empirical test data for the Division 98 simulation exercise Incorporate latest DBC/BITS Products	et technical s xpand the ter il test data fo Products	upport at Ft stbed to addi r the Division	Hood and Fress requiren	t Irwin for T nents for div tion exercise	TF XXI rision size ne	tworks				

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Project D246

Exhibit R-2 (PE 0603805A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibi	(t)	DATE February 1997	997
вир сет Асті иіту 4 - Demonstrat	вирсет Астіvіту 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603805A Com Systems Evalua	רודנה Combat Sei valuation ar	PE NUMBER AND TITLE 0603805A Combat Service Support Control Systems Evaluation and Analysis		РRОЈЕСТ D246
FY 1997 Planned P	 FY 1997 Planned Program: (continued) 500 Research and test on the ground, new and improved video systems. Candidate video systems will be installed on an airborne platform for flight testing with the Near Term Digital Radio prototype and the Surrogate Digital Radio 47 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Total 1918 	systems. Candidate Surrogate Digital nology Transfer (SE	e video systems Radio SIR/STTR)	will be installed on	an airborne platform for f	ight
FY 1998 Planned Program: • 300 Resolve • 609 Insert later	e technical issues identified during the atest technologies and expand the test p and provide empirical test data for torate next set DBC/BITS Products strate advanced networking capabiliti	e TF XXI and Division Simulation the to address requirements for cothe Corps 99 Simulation Exercise ties on an airborne platform by inc	n Exercise orps size netwol orporating the N	rks YTDR production m	e TF XXI and Division Simulation Exercise bed to address requirements for corps size networks he Corps 99 Simulation Exercise sees on an airborne platform by incorporating the NTDR production model on an airborne platform	Æ
FY 1999 Planned Program:	rogram: Resolve technical issues identified during the Corps exercise Optimize technical solutions for Force XXI fieldings Incorporate final set of DBC/BITS products Demonstrate a multiband/multimode capability on an airborne platform to show the insertion of the Future Digital Radio	se orne platform to shc	w the insertion	of the Future Digita	l Radio	
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	Summary Budget 1501 Opriated Value -52 equest	FY 1997 2021 1918 1918	<u>FY 1998</u> 1884 1759	FY 1999 1922 1786		
Project D246	P_{i}	Page 8 of 9 Pages		Exh	Exhibit R-2 (PE 0603805A)	Item 60





RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	T COST BREAK	DOWN (R-3		DATE February	1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603805A Combat Service Support Control Systems Evaluation and Analysis	E nbat Service iation and An	Support Co alysis	introl	РРОЈЕСТ D246
A. Project Cost Breakdown CECOM RDEC Internal Technical Support Contractor Technical Support Travel & Misc. (Routers, Cables, Connectors) SBIR/STTR Total	1996 FY 1997 790 1172 630 570 44 129 47 1464 1918	EY 1998 1028 595 136 1759	FY 1999 1074 584 128 1786		
B. Budget Acquisition History and Planning Information: Not applicable				·	
Project D246	Page 9 of 9 Pages		Exhibit	Exhibit R-3 (PE 0603805A)	

	RDT&E BUDGET ITEM JUS	EM JUS		TION SE	IEET (R	lification sheet (R-2 Exhibit)	bit)		DATE Fek	February 1997	16
80DG 4 - [BUDGET ACTIVITY 4 - Demonstration and Validation			PE NC 060 Dev	PE NUMBER AND TITLE 0603807A Medi Development	ппсе Medical S nt	PENUMBER AND TITLE 0603807A Medical Systems - Advanced Development	Advance	þe		
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	9878	9666	6765	8700	9326	9066	10939	10508	Continuing	Continuing
D808	DoD Drug and Vaccine-Advanced Development	3598	3754	2202	3696	3687	3652	4046	4047	Continuing	Continuing
D811	D811 Military HIV Vaccine and Drug-Advanced Development	2532	2581	0	517	782	795	818	786	Continuing	Continuing
D836	D836 Combat Medical Materiel-Advanced Development	2593	2844	3723	3616	3752	3765	3997	3797	Continuing	Continuing
D837	D837 Soldier System Protection-Advanced Development	1155	817	840	871	1105	1094	2078	1878	Continuing	Continuing

Immunodeficiency Virus (HIV). This includes development and initial human testing of vaccines, prophylactic and therapeutic drugs. Additionally, the PE supports AD of field medical equipment and drugs essential for combat casualty care on all battlefields and OOTW while reducing logistical support requirements. The PE also funds AD diagnostic algorithms, field x-ray, and field production of medical grade oxygen, intensive care delivery platforms and litters, and Advanced Surgical Suites for Trauma Mission Description and Budget Item Justification: This program element (PE) funds the advanced development of medical materiel necessary to field an effective systems which provide enhancement of or protection against physiological and psychological factors affecting cognitive and physical performance imposed by military systems, combat operations or the environment. This includes AD of vision corrective devices. Systems include resuscitators, blood substitutes, advanced sensors and Care (ASSTC). This program is primarily managed by the U.S. Army Medical Research and Materiel Command. This PE focuses on efforts to demonstrate general capability for infectious diseases. The PE funds Advanced Development (AD) of systems for medical protection against naturally occurring diseases and Human military utility to include demonstration and validation in the area of medical materiel and is properly placed in Budget Activity 4.

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Exhibit R-2 (PE 0603807A)

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	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SE	FIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE Fel	February 1997	397
BUDGET ACTIVITY 4 - Demonst	ହ			PE NI 060 Dev	PE NUMBER AND TITLE 0603807A Medi Development	TITLE Medical S nt	PE NUMBER AND TITLE 0603807A Medical Systems - Advanced Development	Advanc			РРОЈЕСТ D808
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D808 DoD Drug	DoD Drug and Vaccine-Advanced Development	3598	3754	2202	3696	3687	3652	4046	4047	Continuing	Continuing
A. Mission Des safety, immunog laboratories and operational perf University of III	A. Mission Description and Justification: This project funds demonstration and validation of candidate medical countermeasures such as vaccines and drugs through safety, immunogenicity, and small scale efficacy testing in volunteers against naturally occurring infectious diseases of mission aborting potential. Work performed in laboratories and among troop populations is directed to prevention, diagnosis and treatment of viral, bacterial and parasitic disease, so as to prevent casualties, sustain operational performance and minimize deaths and disability of armed forces during military operations. Some major contractors are The Salk Institute, Swiftwater, PA, University of Illinois, Chicago, IL, South Florida Research Institute, Miami, FL, and Kenya Medical Research Institute, Nairobi, Kenya.	roject funds (sting in volun d to preventic lisability of a	demonstratic nteers agains on, diagnosis rmed forces ute, Miami,	on and valids t naturally o s and treatms during milits FL, and Ken	ation of cand ccurring infe ent of viral, t ary operatior	lidate medice ectious diseas pacterial and 1s. Some me Research Ins	al counterme ses of missio parasitic dis ajor contracti	asures such n aborting r ease, so as t ors are The bi, Kenya.	as vaccines a ootential. Wo o prevent ca Salk Institute	and drugs th ork perform sualties, sus 2, Swiftwate	urough ed in tain r, PA,
Acquisition Str.	Acquisition Strategy: Test and evaluate in-house and commercially developed products in extensive government-managed clinical trials to gather data required for FDA licensure.	nd commerci	ially develop	ed products	in extensive	government	t-managed cl	inical trials	to gather dat	ta required f	or FDA
FY 1996 Accomplishments: • 1407 Continu	In plish ments: 1407 Continued safety and efficacy evaluations of antimalarial drugs, azithromycin, Halofantrine, WR238605 and antileishmanial drug WR6026. Initiate	evaluations	of antimalar	ial drugs, az	ithromycin,	Halofantrine	, WR238605	sand antileis	shmanial dru	ıg WR6026.	Initiate
•	development or antimalarial drug arceemer and topical antificisminalial drug 1027 Completed expanded Phase II trials of a malaria blood stage vaccine Spf66.	irug arteemel trials of a m the recombil	r and topical alaria blood	anuneismina stage vaccir	and topical antifershinalial titug parontomyeni. Ilaria blood stage vaccine Spf66.	omoniyem.					
• •		the Campylo off the shelf to	bacter vacci	ne. to develop te	elemedicine	hardware an	d concepts ir	ı the preven	tion, diagnos	sis and treat	nent of
Total 3:	infectious diseases. 3598										
FY 1997 Planned Program: • 1768 Conduc	ned Program: 1768 Conduct expanded trial to evaluate safety and efficacy of antimalarial drugs WR238605, arteether, Halofantrine, and antileishmanial drugs WR6026	lluate safety	and efficacy	of antimalar	rial drugs WI	R238605, art	teether, Halo	fantrine, an	d antileishm	anial drugs ¹	WR6026
• •	and paromomycin. 453 Conduct Phase I testing of a vaccine against hemorrhagic fever renal syndrome caused by Hantaan virus. 444 Demonstrate and validate off the shelf technologies to develop telemedicine hardware and concepts in the prevention, diagnosis and treatment of infectious diseases.	accine again the shelf tech	st hemorrha _t mologies to	gic fever ren develop tele	nal syndrome medicine ha	caused by F	fantaan virus ooncepts in tl	s. 1e preventio	n, diagnosis	and treatme	nt of
Project D808				Page 2 of 16 Pages	16 Pages			Exhib	Exhibit R-2 (PE 0603807A))603807A)	

	RDT&E BUDGET ITEM JUSTIFICATIC	FICATION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 4 - Demonstrat	вирдет Астімітү 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603807A Medical Systems - Advanced Development	PROJECT Ced D808
FY 1997 Planned P 49 850 850 Total 3754	 FY 1997 Planned Program: (continued) 49 Begin Phase I safety trials on the Leishmania Skin Test Antigen. 49 Initiate Phase II trials on Leishmaniasis Topical Treatment. 850 Complete Phase I/IIa safety/efficacy trials for RTS,S malaria vaccine. 49 Begin Phase II testing of Shigella flexneri vaccine. 92 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 	ntigen. :- ria vaccine. nology Transfer (SBIR/STTR) Programs.	
FY 1998 Planned Program:	conduct expanded Phase II field trials with RTS,S malaria vaccine. Complete Phase I efficacy trials for detoxified LPS-OMP Group B meningococcal vaccine. Initiate Phase I safety trials for a vaccine to protect against hemorrhagic fever with renal failure syndrome. Initiate Phase II clinical trials for Shigella sonnei vaccine. Conduct Phase II study on Leishmania Skin Test Antigen. Continue Phase I/II studies for S. flexneri vaccine. Complete Phase II efficacy studies for antimalarial drug WR238605.	orocine. Group B meningococcal vaccine. I hemorrhagic fever with renal failure syndrome. 7R238605.	
FY 1999 Planned Program: 1025 Comple 350 Continue 165 Conduc 250 Initiate 500 Begin F 100 Initiate 1106 Initiate 1106 Initiate 1106 Initiate 1106 Initiate	rogram: Complete Phase I safety trials and initiate Phase I/II efficacy trials for a vaccine to protect against hemorrhagic fever with renal failure syndrome. Conduct Phase I safety and immunogenicity trials for Shigella sonnei vaccine. Conduct Phase I safety and immunogenicity trials for Shigella sonnei vaccine. Conduct Phase I safety studies for Leishmania Skin Test Antigen. Initiate Phase I safety studies for a Dengue Tetravalent vaccine. Begin Phase I studies for a Dengue Tetravalent vaccine. Initiate testing of a diagnostic kit for visceral Leishmania. Initiate testing of a diagnostic kit for P. falciparum malaria. Initiate clinical studies for malaria vaccine, reduced immunization schedule.	cy trials for a vaccine to protect against hemorrhagic ferella sonnei vaccine. Antigen. a. nization schedule.	ver with renal failure syndrome.
Project D808	Pa	6 Pages	Exhibit R-2 (PE 0603807A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JSTIFICATIO	N SHEET (R-2 Exhib	it)	DATE	February 1997	266
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603807A Medi Development	ठ मार्ट Medical Sy₃ ent	PE NUMBER AND TITLE 0603807A Medical Systems - Advanced Development	anced		РРОЈЕСТ D808
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 3845 3953 -355 3598	FY 1997 3835 3754 3754	FY 1998 3790 2202	FY 1999 3746 3696			
Change Summary Explanation: Funding: FY98: Funds reprogrammed (-1588) to higher priority requirements.	ogrammed (-1588) t	o higher priority 1	equirements.				
*	icts will advance thr	ough various ever	ıts throughout th	e FY. EV 1008		FV 1000	
1 2	3 4 1	F1 1997 2 3	4 1	2 3	4	2 3	4
Malaria Spf66 MLST 1/2 Campylobacter MLST 1 MI ST 2 IPR	**	×					
Hantaan MLST Special IPR	*	×					
Snigella flexneri Zaspecial IFK Shigella flexneri 602 MLST 1	.		×		;		
Shigella flexneri 602 MLST 2 Shigella sonnei MLST 1					××		
Antinalarial Drug WR238605 MLST 2 Antileishmanial Drug WR6026 MLST 2		×			×		
Antimalarial Drug Azthromycin MLST X*							
Antimalarial Drug Halofantrine MLST 1		×					
Puumula Vaccine MS I					×	×	
Dengue, renavalent vaccine ivisi Diagnostic Kit, Visceral Leishmaniasis					×	€	
Diagnostic Kit, P. falciparum					× >		
Maiaria Vaccine, Reduced Schedule LSTA, MS I		×			<		
Project D808	Pag	Page 4 of 16 Pages		Ú	xhibit R-2 (P	Exhibit R-2 (PE 0603807A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	February 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603807A Medical Systems - Advanced Development	PROJECT D808
FY 1996 1 2 3 4 1 RTS, S, MS I Cholera vaccine, special IPR LSTA, MS II	FY 1997 2 3 4 1 2 3 4 X X	FY 1999 2 3 4
* Milestone complete		· · · · · · · · · · · · · · · · · · ·
Project D808	0 Fages	EXNIBIT R-2 (PE 060380/A)
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RDT&E PROGRAM ELEMENT/	/PROJECT COST BREAKDOWN (R-3)	SOST BR	EAKDO	WN (R-3	(2)	DATE Fe	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603807A Medi Development	AND TITLE Medica ment	al System	PE NUMBER AND TITLE 0603807A Medical Systems - Advanced Development			РРОЈЕСТ D808
A. <u>Project Cost Breakdown</u> Test & Evaluation Product Development Project Management Total	FY 1996 2904 211 483 3598	EY 1	1997 2789 618 347 3754	FY 1998 1539 251 412 2202	FY 1999 3015 351 330 3696			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contract Contract Government Method/Type Award or Performing Performing Activity or Funding Obligation Activity Vehicle Date EAC	ng Project ity Office LC EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	EY 1999	Budget to Complete	Total <u>Program</u>
Product Development Organizations Contracts Salk Institute CPFF APR 1988 50556	98 20586	43325	211	0 618	251 0	351 0	Cont	602 44154
Support and Management Organizations USAMMDA Contracts			313	222 125	295 117	234	Cont	1064
Test and Evaluation Organizations Walter Reed Army			1809	668	216		Cont	2924
Inst of Research Army Laboratories Navy Laboratories Contracts			341 455 299	94 803 993	1323	225	Cont Cont	660 1258 5405
Government Furnished Property: None Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		43325	211 483 2904 3598	618 347 2789 3754	251 412 1539 2202	351 330 3015 3696		44756 1572 10247 56575
Project D808	Pag	Page 6 of 16 Pages	S.		EXP	Exhibit R-3 (PE 0603807A)	0603807A)	Item 61

RDT&E BUDGET ITEM JUSTI	rem jus	TIFICA	TION SI	HEET (F	IFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	260
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060	PE NUMBER AND TITLE 0603807A Medi Development	E NUMBER AND TITLE 3603807A Medical Systems - Advanced Development	ystems -	Advance	p	a u	Р R ОЈЕСТ D811
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D811 Military HIV Vaccine and Drug-Advanced Development	2532	2581	0	517	782	795	818	786	786 Continuing Continuing	Continuing

A. Mission Description and Justification: This project funds Congressionally-mandated, militarily relevant HIV research for demonstration and validation of candidate vaccines and drugs through safety, immunogenicity and small scale efficacy testing and behavioral intervention in volunteers. Efforts are directed to answer militarily unique needs affecting manning, mobilization and deployment.

Acquisition Strategy: Test and evaluate commercially developed vaccine candidates in government managed trials.

FY 1996 Accomplishments:

- Conducted safety and immunogencity studies in human volunteers in Thailand to determine the best candidate to transition. 1583 949
 - Characterized potential cohorts for upcoming field trial.
 - 2532 Total

FY 1997 Planned Program:

- Transition to Engineering and Manufacturing Development a vaccine for the prevention of HIV-1. 2517
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 64
- Total

FY 1998 Planned Program: Project not funded in FY 98.

FY 1999 Planned Program:

- 517 Evaluate vaccines for prevention of HIV to meet FDA data requirements to prove safety and efficacy.
 - Total
- Project D811

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Exhibit R-2 (PE 0603807A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ATION SHEET	(R-2 Exhibi	it)	DATE February 1997	
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603807A Medi Development	ND TITLE Medical Systemt	PE NUMBER AND TITLE 0603807A Medical Systems - Advanced Development		JЕСТ 11
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	1996 FY 1997 2598 2636 2671 2581 -139 2581	FY 1998 1945	FY 1999 1461 517		
Change Summary Explanation: Funding: FY98: Funds reprogrammed (-1945) to higher priority programs. FY99: Funds reprogrammed (-944) to higher priority programs.	programs. rograms.				
C. Other Program Funding Summary: Not Applicable					
D. Schedule Profile: Multiple medical developmental products will advance through various events throughout the FY.	nce through various eve	ents throughout the	e FY.		
			•		
Project D811	Page 8 of 16 Pages		EX	Exhibit R-2 (PE 0603807A)	
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	/PROJECT	COST BI	ZEAKD	OWN (R-	<u>@</u>	DATE F	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603807A Medi Development	AND TITLE A Medic ment	al System	PE NUMBER AND TITLE 0603807A Medical Systems - Advanced Development		.	РРОЈЕСТ D811
A. Project Cost Breakdown Test & Evaluation Product Development Project Management Total	EY 1996 2532 0 0 2532	FY	FY 1997 2581 0 0 2581	FY 1998 0 0 0	FY 1999 517 0 0 517			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations: None	ng Project ty Office C EAC	Total Prior to EY 1996	FY 1996	FY 1997	EY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Support and Management Organizations: Mone Test and Evaluation Organizations Army Laboratories Contracts			0 2532	0 2581	00	517	0 Cont	0 Cont
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			0 0 2532 2532	0 0 2581 2581	0 0 0	0 0 517 517	0 0 Cont Cont	0 Cont
Project D811	Pag	Page 9 of 16 Pages	ies		Exhi	bit R-3 (PE	Exhibit R-3 (PE 0603807A)	
								7.

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fet	February 19	1997
BUDGET ACTIVITY 4 - Demonstrat	BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060 Dev	PE NUMBER AND TITLE 0603807A Medi Development	PE NUMBER AND TITLE 0603807A Medical Systems - Advanced Development	ystems -	Advance		1	РКОЈЕСТ D836
ŏ	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D836 Combat Medical	Combat Medical Materiel-Advanced Development	2593	2844	3723	3616	3752	3765	3997	3797	Continuing	Continuing
A. Mission Descript transport and evacuat Chicago, IL and Unit	A. Mission Description and Justification: The project supports advanced development of new and improved systems essential for battlefield casualty care, patient transport and evacuation, and return to duty in support of special contingency and conventional force operations. Primary civilian contractors are University of Illino Chicago, IL and United Defense Limited Partnership, San Jose, CA.	oject support ort of special p, San Jose, (s advanced contingency	developmen y and conver	t of new and ational force	s advanced development of new and improved systems essential for battlefield casualty care, patient contingency and conventional force operations. Primary civilian contractors are University of Illinois, 2A.	vstems essen Primary civi	tial for battl Iian contrac	efield casual tors are Uni	lty care, patie versity of III	nt nois,
Acquisition Strategy	Acquisition Strategy: Evaluate commercially developed materiel in government managed tests for hardening or other modification.	loped materi	el in govern	ment manag	ged tests for	hardening or	other modifi	cation.			
FY 1996 Accomplishments:	Conducted prototype electrochemical sterilization system. Conducted prototype electrochemical sterilization system. Conducted evaluation of dental filmless imaging system. Developed Armored Treatment Vehicle (ATV) prototype; delivered to EXFOR, Ft. Hood, TX. Demonstrated performance and safety of far forward suction device. Demonstrated and validated off the shelf technologies to develop telemedicine hardware and concepts for the treatment of combat casualties.	hemical steri al filmless in nt Vehicle (A nd safety of fi ff the shelf tt	lization syst aging syster (TV) prototy ar forward si chnologies	em. m. rpe; delivere uction devic to develop te	d to EXFOR e. elemedicine	., Ft. Hood, 1 hardware an	ſX. d concepts fc	r the treatm	ent of comb	at casualties	
FY 1997 Planned Program:	rogram: Conduct user and technical testing of a system for life support for trauma and transport. Transition medical/dental imaging system to procurement. Modify US and allied military and commercial medical equipment used for patient examination, diagnosis and treatment in the field; incorporate technological advances into field medical equipment as they come on-line. Demonstrate and validate off the shelf technologies to develop telemedicine hardware and concepts for the treatment of combat casualties. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.	sting of a sysging system and comme eld medical (the shelf tech search/Small)	tem for life to procurem reial medica equipment a nologies to	support for t tent. Il equipment s they come develop tele echnology T	trauma and t used for pat on-line. medicine ha	cem for life support for trauma and transport. o procurement. cial medical equipment used for patient examination, disquipment as they come on-line. nologies to develop telemedicine hardware and concepts Business Technology Transfer (SBIR/STTR) Programs.	tion, diagno: oncepts for t ograms.	sis and treat he treatmen	ment in the f	field; incorpx casualties.	rate
FY 1998 Planned Program: • 326 Initiate combat • 885 Conduct	rogram: Initiate human safety and initiate efficacy studies of a microencapsulated antibiotic (cephalosporin) and a silver nylon burn dressing for treatment of combat casualties. Conduct MEDITAG testing at Center for Total Access.	ate efficacy a	studies of a n	microencaps	ulated antibi	iotic (cephak	osporin) and	a silver nylc	on burn dress	sing for treat	ment of
Project D836				Page 10 of 16 Pages	16 Pages			Exhibi	Exhibit R-2 (PE 0603807A)	603807A)	
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RDT&E BUDGET ITEM JUSTIFIC	FICATION SHEET (R-2 Exhibit)	(R-2 Exhibi		DATE February 1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603807A Medi Development	чр тіт <u>ге</u> Medical Sys ient	DE NUMBER AND TITLE 0603807A Medical Systems - Advanced Development	PROJECT D836
 FY 1998 Planned Program: (continued) 6 Complete development and evaluation of the electrochemical sterilization system. 809 Conduct technical and user testing of the Life Support for Trauma and Transport System. 1697 Evaluate Armored Treatment Vehicle prototypes; (DT Testing at Yuma Proving Ground Division XXI - 697) Total	electrochemical sterilization system. Support for Trauma and Transport spes; (DT Testing at Yuma Proving C	/stem. sport System. ving Ground - 800	electrochemical sterilization system. Support for Trauma and Transport System. pes; (DT Testing at Yuma Proving Ground - 800), (Program Mgmt Support PM Bradley - 200),	ort PM Bradley - 200),
 FY 1999 Planned Program: 1357 Continue human safety and expand efficacy studies of a microencapsulated antibiotic (cephalosporin) and a silver nylon burn dressing for treatment of combat casualties. 812 Continue MEDITAG testing. 150 Initiate development and evaluation of microwave infusion warming device. 685 Complete technical and user testing of the Life Support for Trauma and Transport System. 612 Evaluate new concepts for a total IV anesthesia system. Total 3616 	s of a microencapsulated infusion warming device poort for Trauma and Traitem.	antibiotic (cephalo nsport System.	sporin) and a silver nylor	n burn dressing for treatm
ary FY t sd Value	EX	FY 1998 2893	FY 1999 2867	
FY 1998 Pres Bud Request Change Summary Explanation: Funding: FY 1998: Funds reprogrammed (+830) into this proje FY 1999: Funds reprogrammed (+749) into this proje	2593 2844 3723 project for the Life Support for Trauma System.	3723 r Trauma System. r Trauma System.	3616	
C. Other Program Funding Summary: Not Applicable.				
Project D836	Page 11 of 16 Pages		Exhibit R	Exhibit R-2 (PE 0603807A)
	632			Item





RDT&E BUDGET	ITEM JUSTIFICATIO	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1997	y 1997
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603807A Medical Systems - Advanced Development	tems - Advance		PROJECT D836
 D. Schedule Profile: Multiple medical developmental products will advance through various events throughout the FY. FY 1996 FY 1997 FY 1997 	pmental products will advance the FY 1996	rough various events throughout the FY 1997	FY. FY 1998 2 3 4	FY 1999	99 4
Silver Nylon Burn Dressing MLST 0 Self-Contained Ventilator MLST 1/3 IPR Medical-Dental Filmless Imaging System MLST 2 IPR Intraosseous Infusion Device MLST 1/3 IPR Armored Treatment and Transport Vehicle	ח	n N		·	
MS 1/2 MS 3 Field Anesthesia Machine MS 1 MS 2 Life Support for Trauma and Transport MS 1 MS 2 MS 2 MS 3 Mis 3 Microwave Infusion warming device		×	×	×	× × ×
* Milestone complete Proiect D836	Pa	Page 12 of 16 Pages	Ж	Exhibit R-2 (PE 0603807A)	7A)
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT CO	ST BR	EAKDC	WN (R-	<u></u>	DATE Fe	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation		PE NUMBER AND TITLE 0603807A Medi Development	AND TITLE A Medica nent	al System	PE NUMBER AND TITLE 0603807A Medical Systems - Advanced Development		ă O	PROJECT D836
A. Project Cost Breakdown Test and Evaluation Product Development Project Management Total	FY 1996 741 1098 754 2593	FX 1997 567 1910 367 2844	1997 567 1910 367 2844	FY 1998 595 2479 649 3723	FY 1999 883 2220 513 3616			
B. Budget Acquisition History and Planning Information								
Award or Performing Obligation Activity <u>Date</u> <u>EAC</u>	Project Office	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Contracts USAMMDA			806	1462	1942 537	1720 500	Cont	5930 1776
Support and Management Organizations USAMMDA Contracts			616 138	300	534 115	420 93	Cont	1870
Test and Evaluation Organizations Army Laboratories			741	267	595	883	Cont	2786
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			1098 754 741 2593	1909 368 567 2844	2479 649 595 3723	2220 513 883 3616		7706 2284 2786 12776
Project D836	Page I	Page 13 of 16 Pages	es		Exh	Exhibit R-3 (PE 0603807A)	0603807A)	
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	FION SE	HEET (R	-2 Exhi	oit)		DATE Fe	February 1997	265
BUDGET ACTIVITY 4 - Demonstrate	BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060	PE NUMBER AND TITLE 0603807A Medical Systems - Advanced Development	TITLE Tedical Sit	ystems -	Advance			PROJECT D837
O	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D837 Soldier System Development	Soldier System Protection-Advanced Development	1155	817	840	871	1105	1094	2078	1878	Continuing	Continuing
A. Mission Descript other tools, to providenvironmental condienvironmental and pervironmental and p	A. Mission Description and Justification: This project supports demonstration and validation of preventive medicine materiel, including devices, pharmacologicals other tools, to provide protection, sustainment, and enhancement of the physiological and psychological capabilities of soldiers in the face of combat operations under all environmental conditions. Focus is on reduction in the incidence of personnel losses due to preventable disease and non-battle injuries through development of environmental and physiological performance monitors and other preventive medicine countermeasures.	roject suppor enhancement the incidence tors and othe	ts demonstra of the physi of personne r preventive	ation and val	s demonstration and validation of preventive medicine materiel, including devices, pharmacole of the physiological and psychological capabilities of soldiers in the face of combat operations of personnel losses due to preventable disease and non-battle injuries through development of preventive medicine countermeasures.	eventive me cal capabiliti ole disease a	dicine mater es of soldier nd non-battl	iel, includin s in the face e injuries th	g devices, plot combat congh develo	harmacolog operations u	cals and ider all
Acquisition Strateg	Acquisition Strategy: Test and evaluate materiel in government	ı governmen		ials to meet	managed trials to meet fielding requirements.	iirements.					
FY 1996 Accomplishments:	inments: Demonstrated Digital Field Medical Treatment Facility telemedicine appliqué. Develop coupling attachments for feasibility study on M-40 protective mask blower as an improved air circulation source for chemical warfare agent protective patient wrap; developed alternative air sources using non-developmental item acquisition strategy.	ledical Treatr s for feasibilii oped alternat	nent Facility ty study on l ive air sourc	r telemedicir M-40 protec es using nor	ne appliqué. tive mask bl n-developme	ower as an ir ntal item ac	nproved air _q uisition stra	circulation s tegy.	ource for ch	ıemical warf	are agent
FY 1997 Planned Program:	rogram: Continue evaluation of Combat Stress Analysis System. Continue to prepare specifications and fabrication of Armored Ambulance Prototype. Continue to prepare specifications and fabrication of Armored Ambulance Prototype. Validate far-forward telementoring and Mobile Medical Mentoring vehicle tactical telemedicine appliqués through participation in digital Force XXI Bde-Corps Advanced Warfighting Exercise. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.	at Stress Ana ions and fabi oring and Mc nting Exercis search/Small	lysis System rication of A obile Medicc e. I Business T	n. .rmored Am al Mentoring echnology T	ysis System. ication of Armored Ambulance Prototype. bile Medical Mentoring vehicle tactical telemedicine ap.	otype. ical telemed R/STTR) Pr	icine appliqu ograms.	ıés through	participation	in digital F	orce XXI
FY 1998 Planned Program:	rogram: Evaluation alternatives for Warfighting Personnel Status Monitoring. Complete evaluation of Combat Stress Analysis System.	arfighting Pe pat Stress Ana	rsonnel Stati alysis Syster	us Monitorir n.	1 g.				·		
Project D837				Page 14 of 16 Pages	16 Pages			Exhib	Exhibit R-2 (PE 0603807A))603807A)	

RDT&E BUDGET ITEM JUSTIFICATI	IFICATION SHEET (R-2 Exhibit)	R-2 Exhibit)	DATE February 1997	1997
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603807A Medi Development	D TITLE Medical Syste ent	PE NUMBER AND TITLE 0603807A Medical Systems - Advanced Development	PROJECT D837
 FY 1999 Planned Program: 829 Warfighting Personnel Status Monitoring Limited User Assessment Testing, Advanced Technology Demonstration. 42 Initiate production prototyping of Combat Stress Analysis System. Total 871 	Assessment Testing, s System.	Advanced Technolo	ogy Demonstration.	
B. Project Change Summary FY 1997 President's Budget 1185 Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Regulary	FY 1997 835 817 817	<u>FY 1998</u> 829 840	<u>FY 1999</u> 857 871	
ng Summary: Not Applicable.				
D. Schedule Profile: Multiple medical developmental products will advance through various events throughout the FY.	hrough various ever	nts throughout the F	;	
Project D837	Page 15 of 16 Pages		Exhibit R-2 (PE 0603807A	(r
	636			Item 61





RDT&E PROGRAM ELEMENT/PRO	PROJECT COST BREAKDOWN (R-3)	ST BR	EAKDO	WN (R-	3	DATE F6	February 1997	197
BUDGET ACTIVITY 4 - Demonstration and Validation	0 0	PE NUMBER AND TITLE 0603807A Medi Development	AND TITLE A Medica nent	PENUMBER AND TITLE 0603807A Medical Systems - Advanced Development	s - Advan	peo		РRОЈЕСТ D837
A. Project Cost Breakdown Test & Evaluation Product Development Project Management Total	FY 1996 0 1103 52 1155	EY 1997 0 797 20 817	997 0 797 20	FY 1998 0 798 42 840	FY 1999 0 827 44 871			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office I EAC E	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Contracts			1103	797	862	827	Cont	3525
Support and Management Organizations USAMMDA Test and Evaluation Organizations: None			52	20	42	44	Cont	158
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management			1103	797 20	798 42	827 44		3525
Subtotal 1 est and Evaluation Total Project			1155	817	840	871		3683
Project D837	Page 16	Page 16 of 16 Pages 637	SS		Exh	Exhibit R-3 (PE 0603807A)	0603807A)	Item 61
		750						

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SH	HEET (R	-2 Exhil	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 090	PE NUMBER AND TITLE 0603854A Artill	TTLE Trillery S	ystems /	PENUMBER AND TITLE 0603854A Artillery Systems Advanced	5		
			De	Development	ţ					
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	238590	324380	294495	47102	0	0	0	0	904567
D505 Crusader - Advanced Development	0	235795	322291	293920	47102	0	0	0	0	899108
DC68 TRACTOR YEOMAN	0	2795	2089	575	0	0	0	0	0	5459

Mission Description and Budget Item Justification: This program element supports the Demonstration and Validation efforts for the Crusader - AD Program. Formerly, lethality levels through independent operations. The RSV will have significantly increased capabilities in the areas of resupply, mobility and survivability and will provide a single source of ammunition, fuel, propellant and other supplies for the SPH. This program element focuses on efforts associated with the technology demonstration and Advanced Development (D409) and Crusader Re-Supply Vehicle-Advanced Development (DB88) into one line in FY 97 based upon the 15 Nov 94 Defense Acquisition Board (DAB) review. The Crusader system is the Army's next generation SPH and RSV. Crusader will have significantly increased capabilities in the areas of lethality, Advanced Development and DB88 Future Armored Recovery Vehicle-Advanced Development. This single project combines both Crusader Self Propelled Howitzermobility, survivability, resupply, command and control, and sustainability by capitalizing on emerging, advanced technologies. The SPH will also achieve increased these efforts were included in PE 0603645A, Armored Systems Modernization (ASM) Advanced Development as Projects D409 Advanced Field Artillery Systemvalidation of Crusader and is correctly placed in Budget Activity 4.

Page 1 of 6 Pages

Exhibit R-2 (PE 0603854A)





RDT&E BUDGET ITEM JUS	LEM JUS	TIFICA	TION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE N 060 Dev	PE NUMBER AND TITLE 0603854A Artill Development	DE NUMBER AND TITLE 0603854A Artillery Systems Advanced Development	ystems /	Advance	ъ		РРОЈЕСТ D505
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D505 Crusader - Advanced Development	0	235795	322291	293920	47102	0	0	0	0	899108

significantly increased capabilities in the areas of lethality, mobility, survivability, resupply, command and control, and sustainability by capitalizing on emerging, advanced combines both Crusader Self Propelled Howitzer-Advanced Development (D409) and Crusader Re-Supply Vehicle-Advanced Development (DB88) into one line in FY 97 A. Mission Description and Justification: This project supports the demonstration and validation efforts for the Crusader - AD Program. Formerly, these efforts were technologies. The SPH will also achieve increased lethality levels through independent mission execution. The SPH will also achieve increased lethality levels through based upon the 15 Nov 94 Defense Acquisition Board (DAB) review. The Crusader system is the Army's next generation SPH and artillery RSV. Crusader will have independent operations. The RSV will have significantly increased capabilities in the areas of resupply, mobility and survivability and will provide a single source of included in PE 0603645A, Armored Systems Modernization (ASM) Advanced Development as Projects D409 AFAS-AD and DB88 FARV-AD. This single project ammunition, fuel, propellant and other supplies for the SPH.

Acquisition Strategy: Not applicable

FY 1996 Accomplishments: See Projects D409 and DB88 in PE 0603645A for accomplishments.

FY 1997 Planned Program:

- maturation and integration of critical technologies. Initiate prototype fabrication and demonstration. Conduct system design review. Conduct Phase I Support and management: Continue project management efforts, to include scientific and engineering analysis, product development team support, 205346 Product development: Continue developmental efforts under the Crusader developmental Phases I & II contract; continue efforts in support of and engineering management services. 19061
 - Test and evaluation: Purchase propellant, ammunition and fuzes required for the initiation of Engineering Development Testing (EDT)-A testing; begin EDT-A testing. 5620
 - Small Business Innovation Research /Small Business Technology Transfer (SBIR/STTR) Programs 5762 235795 Total

Project D505

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Exhibit R-2 (PE 0603854A)

	RDT&E BUDGET ITEM JUST	SUL ME		ON SH	EET (R-	FICATION SHEET (R-2 Exhibit)	it)		DATE Feb	February 1997	76
BUDGET ACTIVITY 4 - Demonstrati	SUDGET ACTIVITY 4 - Demonstration and Validation			PE NUN 0603 Deve	PE NUMBER AND TITLE 0603854A Artill Development	PE NUMBER AND TITLE 0603854A Artillery Systems Advanced Development	/stems A	dvancec	_	E Õ	РRОЈЕСТ D505
FY 1998 Planned Program: • 293990 Produc	rogram: Product development: Continue developmental efforts under the Crusader development Phase II contract. Continue Prototype fabrication and	te developm	ental efforts u	nder the Cr	usader devel	opment Phas	se II contrac	t. Continue	Prototype fa	brication and	773
• 19990	demonstration. Support and management: Continue project	ntinue projec	xt managemen	t efforts; to	include scie	ntific and en	ıgineering aı	nalysis, prod	management efforts; to include scientific and engineering analysis, product development team support	nent team su	pport
• 8311 Total 322291	and conguited in an age in set vites. Test and evaluation: Purchase ammo for ED	ammo for E	DT and continue EDT-A testing.	nue EDT-A	testing.						
FY 1999 Planned Program: • 261423 Product	rogram: Product development: Continue developmental efforts under the Crusader development Phase II contract. Initiate long lead item buys. Complete	te developm	ental efforts u	nder the Crı	usader devel	opment Pha	se II contrac	t. Initiate lo	ng lead item	buys. Com	plete
• 20570	Prototype labrication and demonstration. Support and management: Continue project management efforts; to include scientific and engineering analysis, product development team support and engineering management services.	onstration. ntinue projec ervices.	x managemen	t efforts; to	include scie	ntific and en	ıgineering aı	nalysis, proc	luct developn	nent team su	pport
• 11927 Total 293920	Test and evaluation: Continue EDT-A testing and initiate combined Developmental Testing/Operational Testing.	EDT-A test	ing and initiat	e combined	Developme	ntal Testing/	/Operationa	Testing.			-
B. Project Change Summary FY 1997 President's Budget Appropriated Value	Summary Sudget		FY 1996 0	FY 1997 255916 235795		FY 1998 324285	FY 1999 296054	<u>8</u> 4			
FY 1998 President's Budget Request	optialed value Budget Request		0	235	235795	322291	293920	0;			
C. Other Program Funding Summary	Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Compl	Total Cost
RD 1E, A Budget Activity 4 PE 0603645A, Project D409 RDTE, A Budget Activity 4	PE 0603645A, Project D409 Crusader SPH-AD RDTE, A Budget Activity 4	45923								0 0	127370
RDTE, A Budget Activity 5	RDTE, A Budget Activity 5					311211	434690	433920	202648	Cont	Cont
PE 0604854A, Project D503 RDTE, A Budget Activity 4 PE 0604854A, Project D2K	PE 0004854A, Project D503 Crusader - ED RDTE, A Budget Activity 4 PE 0604854A, Project D2KT Crusader OT				499	1156	107	109	3485	Cont	Cont
Project D505			7	Page 3 of 6 Pages	Pages			Exhibit	Exhibit R-2 (PE 0603854A)	03854A)	
				1							140 (1)





RDT&E BUDGET ITEM JUS	TEM JUST	FICA	TION SH	TIFICATION SHEET (R-2 Exhibit)	-2 Exhit	bit)		DATE Fet	February 1997	266
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NU 060: Dev	PE NUMBER AND TITLE 0603854A Artillery Systems Advanced Development	rite rtillery S it	ystems	Advance			PROJECT D505
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To <u>Compl</u>	Total <u>Cost</u>
RDTE, A Budget Activity 5 PE 0604645A, Project D175 MOFA	8509	6585							0	36159
D. Schedule Profile	FY 1996	A	F	FY 1997	4	FY 1998	98		FY 1999	4
Award Dev Phases I/II Contract System Design Review Dev Phase I In Process Review (Authorization to enter Phase II) Integration Checkout SPH/RSV available for test		-	· ×		•	1		· ×		•
Project D505			rage 4 of 0 rages	o Fages				EXIIDIT K-Z (PE UDU3834A)	1003834A)	1
										Tem oz

RD	T&E PRO	GRAM EL	RDT&E PROGRAM ELEMENT/PROJECT		COST B	REAKDO	COST BREAKDOWN (R-3)	3)	DATE F6	February 1997	160
BUDGET ACTIVITY 4 - Demonstration and Validation	ition and Va	ılidation			PE NUMBER AND TIT 0603854A Ar Development		o ⊤i⊤LE Artillery Systems Advanced ent	is Advanc			РRОЈЕСТ D505
 A. Project Cost Breakdown Product Development Support and Management Test and Evaluation SBIR/STTR Total B. Budget Acquisition History and Planning Information 	reakdown ant ement tion History an	d Planning In	<u> </u>	FY 1996	I	FY 1997 205346 19067 5620 5762 235795	FY 1998 293990 19990 8311 322291	FY 1999 261423 20570 11927 293920			
Performing Organizations Contractor or Contract Government Method/Type Performing or Funding (Activity Vehicle I	izations Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
United Defense,	SS/CPIF	Sep 94	TBD	TBD			179143	274693	246531	41730	742097
ARDEC, Picatinny	М						23258	17255	13904	50	54467
TACOM, Warren,	ЬО						867	469	401	0	1737
ARL, Aberdeen Proving Ground,	PO						1378	1123	137	35	2673
Various OGAs Various contracts	omon Orden						375 325	375 75	375 75	0	1125
PM Crusader, Picatinny Arsenal,		24000					4472	5360	2600	840	16272
ARDEC, Picatinny Arsenal, NJ	PO						9084	0006	0006	009	27684
Project D505			:	Pag	Page 5 of 6 Pages 642	s _s		Exh	Exhibit R-3 (PE 0603854A)	0603854A)	Item 62





RD	RDT&E PROGRAM ELEMENT/	RAM EL		PROJECT	COSTB	COST BREAKDOWN (R-3)	JWN (R-	3)	DATE F .	February 1997	997
BUDGET ACTIVITY 4 - Demonstration and Validation	tion and Val	lidation			PE NUMBER AND TIT 0603854A Art Development	PE NUMBER AND TITLE 0603854A Artillery Systems Advanced Development	ry System	ıs Advanc	pec		РКОЈЕСТ D505
Contractor or Government Performing Activity ACALA, Rock	Contract Method/Type or Funding Vehicle PO	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997 148	<u>FY 1998</u> 150	<u>FY 1999</u> 160	Budget to Complete 80	Total <u>Program</u> 538
Island, IL TACOM, Warren,	PO						2008	2100	2200	1150	7458
ARL, Aberdeen Proving Ground,	PO						800	830	098	450	2940
MD Various OGA's Various Contracts SBIR/STTR							956 1599 5762	1000	1050 1700	400	3606 5249 5762
TECOM, Yuma PO Proving Grd, AZ, CSTA, APG, MD	PO PO	•			•		5620	8311	11927	1167	27025
Government Furnished Property: None Subtotal Product Development	ished Property:	None	,				205346	293990	261423	41815	802574
Subtotal Test and Evaluation Total Project	u Management Valuation						235795 235795	322291 322291	293920	47102	27025
Project D505			,	Pa	Page 6 of 6 Pages	ડેલ્ડ		Ext	Exhibit R-3 (PE 0603854A)	. 0603854A)	

RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 4 - Demonstration and Validation			PE NI 060	PE NUMBER AND TITLE 0603856A SCAL	RITLE SCAMP B	E NUMBER AND TITLE 3603856A SCAMP BLK II (SPACE)	ACE)		<u>а</u> О	РРОЈЕСТ D389
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D389 SCAMP BLK II*	0	8250	73	6996	15668	34284	26823	24833	24833 Continuing Continuing	Continuing

*\$5.5M SCAMP BLK II Engineering Feasibility Efforts (EFE) reported under 0303142A.D386 in FY 1996

SCAMP BLK II in the range of 12-15 pounds was approved in the Acquisition Decision Memorandum. EFE began in FY96 and will continue through FY99. These efforts by priority ground tactical users to transmit and receive intelligence, command and control traffic. It will transmit in the Extremely High Frequency (EHF) band and receive in the Super High Frequency (SHF) band. It will provide Low Data Rate (LDR) secure voice at 2400 bps and secure data at 75-2400 bps, as well as interface with Common A. Mission Description and Budget Item Justification: Project D389 - SCAMP BLK II. The Single Channel Anti-Jam Manportable (SCAMP) BLK II Terminal will be a manpackable, satellite communications terminal to be employed by units that require range extension for command and control communications. Block II will be used operate in the transmit, receive or standby mode throughout an entire mission (typically 30 days). SCAMP BLK II EHF terminal will provide direct support to the tactical Hardware/Software devices such as the Lightweight Computer Units and the Hand-Held Terminal Unit. The SCAMP BLK II will have embedded COMSEC, TRANSEC will provide confidence in technical approach and lead to a Milestone II Engineering Manufacturing Phase. This project provides for the demonstration and validation of and GPS. In addition to operation on MILSTAR satellites, the SCAMP Block II will operate on all satellites which utilize the MIL-STD-1582C LDR waveform. It will warfighter mobile forces with anti-jam protection, low probability of intercept, and low probability of detection. Engineering Feasibility Efforts (EFE) to develop the advanced technologies and is therefore appropriately funded in Budget Activity 4.

placing emphasis on downsizing the following subsystems: Radio Frequency (RF) Generator, Digital Processor, Transmitter and Antenna. These subsystems will utilize technologies such as Millimeter Microwave Integrated Circuits (MIMIC), custom Very Large Scale Integrated Circuits (VLSIC) and increased efficiency power devices. Acquisition Strategy: SCAMP BLK II will be a manpackable terminal in the 12-15 lb. range. SCAMP BLK II began Engineering Feasibility Efforts (EFE) in FY96

FY 1996 Accomplishments: Program funded under PE 0303142A.D386 (See asterisked note above)

FY 1997 Planned Program:

- Implements integration of Engineering Feasibility Efforts (EFE) for functional prototype terminals
- 763 Continues paging prototype system efforts
- Continues Defense Advanced Research Project Agency (DARPA) advanced communications technologies and System engineering efforts
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)
- otal 825(

Project D389

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Page 1 of 3 Pages

Exhibit R-2 (PE 0603856A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R	-2 Exhib	Œ		DATE Feb	February 1997	
BUDGET ACTIVITY 4 - Demonstration and Validation	PE NUMBER AND TITLE 0603856A SCA	SCAMP BLK II (SPACE)	K II (SP/	ACE)		A C	PROJЕСТ D389
FY 1998 Planned Program: T3 Continue prototype development Total 73							
 FY 1999 Planned Program: 4985 Completes Prototype development 3534 Test, evaluate and demonstrate the prototype 1150 Conduct Milestone II Decision Review Total 9669 							
B. Project Change Summary FY 1996 FY 1997 President's Budget Annomiated Value	FY 1997 8080 7910	FY 1998 9302	FY 1999 3663	Øl 53			
ropriated Value tequest	8250	73	6996	6			
Change Summary Explanation: Funding: FY97: Not a new start. Funds reprogrammed to 0603856A.D389 from 0303142A.D386. FY98: (-9229) Funds reprogrammed to higher priority requirements FY99: (+6006) Continue/complete prototype development/evaluations/demonstrations/re	to 0603856A.D389 from 0303142A.D386. r priority requirements development/evaluations/demonstrations/reviews	D386.					
C. Other Program Funding Summary EY 1996 FY 1997 FY Other Procurement Army 2 - SSN: BC 4110 0 0	FY 1998 FY 1999 0 0	FY 2000 0	FY 2001 0	FY 2002 30052	FY 2003 62569	To Compl Cont	Total Cost Cont
D. Schedule Profile 1 2 3 4 1	FY 1997 2 3	4	FY 1998 2 3	.8 3 4	1 2	FY 1999 2 3	. 4
Continue EFE Prototype Development and Integration Prototype Demonstrations/Evaluations MSII				·		×	×
Project D389	Page 2 of 3 Pages			Exhibi	Exhibit R-2 (PE 0603856A)	303856A)	
	545						Item 63

RDT&E	PROG	RAM ELI	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT (COST B	REAKDC	WN (R-	3)	DATE Fe	February 1997	760
BUDGET ACTIVITY 4 - Demonstration and Validation	and Val	idation			PE NUMBER AND TITLE 0603856A SCA	AND TITLE	SCAMP BLK II (SPACE)	SPACE)			PROJECT D389
 A. Project Cost Breakdown Contractor Government Systems Engineering and Project Management SBIR/STTR Total 	lown gineering an	d Project Man	agement	FY 1996	EX	FY 1997 2013 6044 193 8250	FY 1998 0 73 73	FY 1999 737 8932 9669			
B. Budget Acquisition History and Planning Information	History and	Planning Inf	<u>ormation</u>								
g Organiza or t	ations Contract Method/Type	Award or	Performing	Project	Total						·
Performing Or Funding Activity Vehicle Product Develonment Organizations	or Funding <u>Vehicle</u> • Organization	Obligation Date	Activity <u>EAC</u>	Office <u>EAC</u>	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Other Contracts C-CP Govt Support MIPR SBIR/STTR	C-CP MIPR/PWD	Various Various	N/A	TBD TBD			1793 2929 193	0	737 4248	Cont	2530 7177 193
Support and Management Organizations Other Contracts MIPR/PWD Variot Govt Support MIPR/PWD Variot Lincoln Labs MIPR Variot Lab Activities MIPR	cement Organiz MIPR/PWD MIPR/PWD MIPR	ations Various Various Various		TBD TBD TBD			1140 666 255	73	887 1175 200	Cont	2027 1914 455
<u>uation</u> Furnis	ganizations Property:	y at 10ths : None None		TBD			4/71	Þ	7747	Cont	3090
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	oment nagement tion						4915 3335	73	4985 4684		9900
Total Project	<u>.</u>						8250	73	6996		17992
Project D389				Pag	Page 3 of 3 Pages	s,		Exhi	Exhibit R-3 (PE 0603856A)	0603856A)	



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RDT&E BUDGET ITEM JUS	FEM JUS	TIFICA	TION S	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE Fek	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Developm	ent	PE NI 060	PE NUMBER AND TITLE 0604201A Aircraft Avionics	птге Vircraft A	vionics			ā ()	PROJECT DC97
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC97 Aircraft Avionics	20073	14694	21669	12729	6111	1107	52427	36759	36759 Continuing Continuing	Continuing

A. Mission Description and Budget Item Justification: This Program Element funds the development of avionics systems required to horizontally and vertically integrate the battlefield (commonly referred to as "digitization of the battlefield"). The following tasks in this PE support research efforts in the engineering and manufacturing development phases of these systems, therefore, the PE is correctly placed in Budget Activity 5.

Project DC97 - Aircraft Avionics:

- communication capability which is reliable, secure, easy to operate, with automatic link establishment and electronic counter-countermeasures. The AN/ARC-220 will be form/fit interchangeable with the AN/ARC-199 HF radio, meet military standards for compatibility with the 1553 data bus, night vision lighting, data transmission, The AN/ARC-220 Nap-Of-Earth (NOE) Communications High Frequency (HF) Radio provides a long-range (300 kilometers), non-line-of-sight digital and voice and shipboard operations.
- real world needs of combat maneuver commanders to perform highly mobile and responsive digital, voice, and imagery command and control (C2) functions in the UHintercommunications facilities for up to six operators, and joint interoperability as well as maritime and air traffic control communications. The A2C2S is in response to communications. It also provides digitized battlefield communications links with Army combined arms team members, joint service and combined force elements, and system will allow Army aviation forces access to C2 and situational awareness information for conduct of close, deep, rear, and security operations. The A2C2S is used costly fratricide incidents via the capability to closely monitor and control operations. Satellite communications provide access to tactical communication systems and enhanced with this system by providing the capability to communicate digitally with Navy or Air Force close air support as well as relaying target information. This to provide C2 for disaster relief, peacekeeping, drug interdiction, and both low and high intensity conflict missions. The A2C2S will play a major role in eliminating 60 helicopter. The UH-60 A2C2S system will enable the commander and essential staff to remain highly mobile with the capability to interject critical C2 across the designated battle area without sacrificing access to information products or jeopardizing continuity of operations due to command post relocation. Interoperability is The Army Airborne Command and Control System (A2C2S) functions as a highly mobile command post. When mounted in the UH-60 helicopter with auxiliary equipment, it provides tactical voice, data, and imagery digitized battlefield communications both in secure and nonsecure modes for corps, division, and brigade commanders. The system provides battle commanders access to critical situational awareness and off-board national asset intelligence information via satellite enable communication with the force and command structure from Joint Chiefs of Staff (JCS) down to battalion when required.

Acquisition Strategy: This project is comprised of multiple systems. The A2C2S is being developed by the Naval Research Laboratory. The production contract will be competitively awarded

FY 1996 Accomplishments:

- Continued EMD for AN/ARC-220 NOE Communications HF Radio (5 prototypes) 2859
- Continued program management support for the AN/ARC-220 NOE Communications HF Radio 479

Project DC97

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Exhibit R-2 (PE 0604201A)

Page 1 of 6 Pages

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineerin	DGET ACTIVITY - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604201A Aircraft Avionics	PROJECT DC97
FY 1996 Accompliance 9707 9111 538 927 837 93710 919	ishments: (continued) Initiated development of Enhanced Joint ConContinued design and development of A2C22 Initiated technical documentation for A2C28 Initiated A2C2S Workstation Software Continued development of A2C2S Antenna Initiated test and integration for A2C2S Continued program management support for Initiated systems engineering, logistics proce	mmunications Interface Terminals (JCIT): four A2C2S prototypes: S Interface Module (AIM) - Phase II the A2C2S ssses for A2C2S	
FY 1997 Planned Program:	te development of Enhanced JCIT, we development of A2C2S Antenna In the development of A2C2S Workstatic te test and integration procedures for the system engineering, logistics, and the program management support for the business Innovation Research /Small	orkstation consoles and other A2C2S prime mission equipment nterface Module (AIM) on Software A2C2S Engineering Development Model technical documentation for A2C2S the A2C2S Business Technology Transfer (SBIR/STTR) Programs	
FY 1998 Planned Program:	te development of Enhanced JCIT, we development of A2C2S Antenna In the development of A2C2S Workstatic te test and integration procedures for the system engineering, logistics, and the program management support for the	orkstation consoles and other A2C2S prime mission equipment nterface Module (AIM) on Software A2C2S Engineering Development Model (EDM) technical documentation for A2C2S he he A2C2S	
FY 1999 Planned Program: 9 9679 Continu 1000 Comple	te development of Enhanced JCIT, Workstation Cate development of A2C2S Antenna Interface Mo		Exhibit R-2 (PE 0604201A)
		648	Item 64







RDT&E BUDGET ITEM JUS	EM JUSTIFICAT	TIFICATION SHEET (R-2 Exhibit)	ET (R-2	Exhibi	₽		DATE Feb	February 1997	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm		PE NUM 0604 ;	PE NUMBER AND TITLE 0604201A Aircr	ΣΤΙΤΙΕ Aircraft Avionics	onics			PRC DC	PROJECT DC97
 FY 1999 Planned Program: (continued) 100 Complete development of A2C2S Workstation Software 400 Continue test and integration procedures for A2C2S Engineering Development Model (EDM) 500 Continue system engineering, logistics, and technical documentation for A2C2S 1050 Continue program management support for the A2C2S Total 12729 	C2S Workstation Softwar procedures for A2C2S En logistics, and technical dont support for the A2C2S	e gineering Dev ocumentation	elopment M for A2C2S	odel (EDM)					
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Budget Request		FX 1996 21442 22044 -1971 20073	EX 1997 15008 14694 14694	FY 1998 14787 21669	FX 1999 1335 12729	65 66 63 66			
Change Summary Explanation: Funding: FY98 (+6)	FY98 (+6882) and FY99 (+11394) increased to continue EMD.	increased to	continue EM	Ð.					
C. Other Program Funding Summary Aircraft Procurement, Army (APA): Airborne Communications -AA0705 BLIN 1033* Airborne Command and Control Console AA0710 BLIN 1026**	FY 1996 FY 1997 17320 42047	FY 1998 47450	FY 1999 F 43395 12890	EY 2000 45803 13424	FY 2001 0 18243	FY 2002 24283 37641	FY 2003 20511 53600	To Compl Cont 53600	Total Cost Cont 189398
* Represents ARC-220 only, which is a portion of the funding i ** Represents A2C2S only, which is a portion of the funding in \$	he funding in SSN AA0705. funding in SSN AA0710.	05.							
D. Schedule Profile:	FY 1996	4	FY 1997 2 3	97 3 4	-	FY 1998 2 3	4 1	FY 1999 2 3	- +
Initiated Preproduction Qualifications - AN/ARC-220 HF radio Continued AN/ARC-220 NDI EMD Effort Initiate development of Enhanced JCIT Prototypes Continue design and Development of A2C2S Workstation Consoles		×			×		×		
Project DC97		Page 3 of 6 Pages	Pages			Exhibi	Exhibit R-2 (PE 0604201A)	604201A)	
		649							Item 64

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUSTIFICAT	TION SHEE	T (R-2 E)	chibit)		DATE Feb	February 1997	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopment	PE NUMBER AN 0604201A		D ΤΙΤΙΕ Aircraft Avionics	SS		PROJECT DC97	5.
D. Schedule Profile:	FY 1996	4 1	FY 1997	-	FY 1998	7	FY 1999	
Develop Technical Documentation - A2C2S Test and Integration Procedures		- × -		t	7 - ×	t . ×		
Initiate A2C2S Prototype Integration Initiate A2C2S Tests and Demonstrations	* *							·
Continue development of A2C2S Antenna	;×	×			×	×		
Initiate/continue A2C2S Systems Engineering,	*X	×			×	×		
Logistics Frocesses Continue development of Enhanced JCIT, Work Station Consoles and other		×			×	×		
Prime Mission Equipment Continue development of A2C2S Workstation Software	×	×			×	×		
Denotes compreted enorgy								
Project DC97		Page 4 of 6 Pages	res		Exh	Exhibit R-2 (PE 0604201A)	304201A)	
		650		- -			Item 64	64



December And Designation Support	RDT&E PROGRAM ELEMENT/PROJECT	JGRAM EL	EMENT/PR		SOST BI	REAKDO	COST BREAKDOWN (R-3)	3)	DATE F e	February 1997	997
PX 1996 PX 1997 PX 1998 PX 1998 PX 1999 11679	BUDGET ACTIVITY 5 - Engineering and Mai	nufacturing	Development		PE NUMBER 0604201	AND TITLE A Aircra	ft Avionic	ş			PROJECT OC97
14694 21669 12729 12694 12729 14694 21669 12729 14694 21669 12729 14694 126944 126944 126944 126944 126944 126944 126944 12694	A. Project Cost Breakdown Product Development Program Management Support:	·		FY 1996 17336 1398	EX 1.	1997 3429 906	FY 1998 20519 1150	FY 1999 11679 1050			
Acquisition History and Plenning Information Organizations Organizations Accounted: Obligation Activity Velloge Project Prior to Principle Obligation Activity Office Prior to Principle August	SBIR/STTR Total			20073	1	359 4694	21669	12729			
Corpuscations Contract or Publicle Activity or Publisation Performing or Publisation Project or Publisation EXL1996 EYL1996 EYL1997 EYL1998 FYL1999 Complete Publisation Velloigeninations or Publisation or Publisations Activity of EAC EAC EYL1996 EYL1996 EYL1999 FYL1999 Complete Publisation or Publisation Publisation of EAC EAC EYL1996 EYL1999 FYL1999 EYL1999 Complete Publisation or Publisation Publisation or Publisa	B. Budget Acquisition History	and Planning In	<u>formation</u>								
Codar Codar Codar Cont Cont	Performing Organizations Contract Contract Government Method/Ty Performing or Funding Activity Vehicle	pe Award or Obligation	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Jan MIPR 66980 66980 8630 14270 11421 18419 10079 4161 ad MIPR Cont Cont 718 1546 2008 2100 1600 Cont Aniph MIPR Cont Cont 50 432 449 600 500 Cont ss MIPR Cont Cont 3426 700 62 150 150 Cont nand MIPR Cont Cont Rage 5 of 6 Pages Too 440 400 Cont	Froduct Development Organiza Rockwell FFP/OPT International	ations Aug 94	12486	12486	10966	1520					12486
Part of the splied with the with the splied with the sp	lar		08699	08699	8630	14270	11421	18419	10079	4161	08699
cont and Management Organizations Cont Cont Cont Cont Cont SO Cont tronic Combat tronic Combat attornic Combat attornic Sumand and Post Companies MIPR Cont Cont 3426 700 62 150 Lont Electronics mand Avoiation and PR Cont Cont 186 366 400 400 Cont ect DC97 Page 5 of 6 Pages Exhibit R-3 (PE 0604201A)	pplied y		Cont	Cont	718	1546	2008	2100	1600	Cont	Cont
munications MIPR Cont MIPR Atom	Support and Management Orga Aviation MIPR Electronic Combat	anizations	Cont	Cont	50	432	449	009	200	Cont	Cont
MIPR Cont Cont Cont Cont Cont Page 5 of 6 Pages Exhibit R-3 (PE 0604201A) Exhibit R-3 (PE 0604201A)	munications Electronics		Cont	Cont	3426	700	62	150	150	Cont	Cont
Page 5 of 6 Pages			Cont	Cont		186	366	400	400	Cont	Cont
	Project DC97			Pag	e 5 of 6 Page	SZ		Exh	ibit R-3 (PE	0604201A)	

RDT&E	PROG	RDT&E PROGRAM ELEMENT/P	EMENT/PR	OJECT	COST B	REAKDO	ROJECT COST BREAKDOWN (R-3)	3)	DATE F	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	d Manu	facturing I	Development		PE NUMBEF 060420 °	PE NUMBER AND TITLE 0604201A Aircra	PE NUMBER AND TITLE 0604201A Aircraft Avionics	, o			PROJECT DC97
Contractor or Con Government Met Performing or F Activity Veh	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Support and Management Organizations (cont) Army Research Lab/ Air Force	nt Organi	zations (cont)	129	129	20	80	29			0	129
Test and Evaluation Organizations: USA TEXCOM MIPR SBIR/STTR	ganization PR	:s	1339	1339		. 1339	359				1339 359
Government Furnished Property: Not Applicable	Property:	Not Applicab	le								
Subtotal Product Development Subtotal Support and Management	ment ragement				20314 3496	17336 1398 1339	13429 906 359	20519 1150	11679 1050	Cont	Cont Cont
Total Project					23810	20073	14694	21669	12729	Cont	Cont
Project DC97				Pa	Page 6 of 6 Pages	sə.		Exh	Exhibit R-3 (PE 0604201A)	0604201A)	
					652						Item 64



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION S	HEET (R	≀-2 Exhi	bit)		DATE Fe l	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE NI 0 0 0	PE NUMBER AND TITLE 0604220A Armed, Deployable OH-58D	TITLE Irmed, D	eployabl	е ОН-58Г		4 0	РRОЈЕСТ D538
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D538 Crew Station Mission Equipment Trainer (CSMET)	889	1130	0	0	0	0	0	0	0	1818

available, the aviator cannot continue to practice crew skills. As a result, aircrew skills decay rapidly. Maintaining a high level of aircrew skill has direct impact on combat Vision Imaging System (ANVIS) display, and airborne video tape recorder. The CSMET will network with other simulation devices for collective training. The project in to support training requirements for the OH-58D Kiowa Warrior flight crew. The CSMET effort responds to the lack of training devices, simulators or simulations (TDSS) A. Mission Description and Budget Item Justification: The Crew Station Mission Equipment Trainer (CSMET) is a desktop simulation training device that is designed this Program Element supports research efforts in the engineering and manufacturing development phases of the acquisition strategy and is, therefore, correctly placed in aviation survivability equipment, automatic target handover system, communication and navigation equipment, mast mounted sight, data transfer system, Aviator Night available to fielded Kiowa Warrior units. Currently, the aircraft itself provides the only primary sustainment training device. Training provided through the use of the readiness and proficiency. The CSMET will support refresher and sustainment training of those skills required to initialize, operate and employ the weapons systems, actual aircraft is at best limited due to the inability to employ total system capabilities under combat conditions, i.e., weapon systems. When the actual aircraft is not Budget Activity 5.

Government-owned OH-58D Kiowa Warrior Cockpit Procedures Trainer Ada software will be integrated into the computer and image generator hardware of choice based Acquisition Strategy: The acquisition strategy is based primarily on the integration of government-furnished data and commercially available non-developmental items. on maximum compatibility and interoperability with other aviation simulation systems. Acquisition will be accomplished in four phases -- pre-prototype, prototype, production, and support/sustainment -- and will be accomplished utilizing an Integrated Product Team approach among various government agencies.

FY 1996 Accomplishments:

- 510 Awarded Phase I Development Contract Study Effort and Development of Prototype
 - Government support 178
 - Total

FY 1997 Planned Program:

- Award Phase II Development Contract Prototype Build/Systems Integration
- Award Contract Upgrade Government-Furnished Equipment
- Maintenance support for operational testing development and for operational testing 242
- Government Support
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) programs
 - Total

Project D538

Page 1 of 3 Pages

Exhibit R-2 (PE 0604220A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUST	FICATI	NO SH	EET (R.	-2 Exhib	Ĕ		DATE Fe	February 1997	161
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopmer)	<u> </u>	PE NUN 0604	PE NUMBER AND TITLE 0604220A Arme	эттге Armed, Deployable OH-58D	ployable	OH-58		.	РКОЈЕСТ D538
FY 1998 Planned Program: Project not funded in FY 98	FY 98									
FY 1999 Planned Program: Project not funded in FY 99	FY 99									
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 706 726	FY 1997 1154 1130		FY 1998 0	FY 1999 0	6) O			
Adjustifients to Appropriated Value FY 1998 Pres Bud Request		688	1	1130	0		0			
C. Other Program Funding Summary APA Budget Activity 2 AZ2200 Kiowa Warrior (CSMET)*	FY 1996	FY 1997	FY 1998 3230	FY 1999 7390	FY 2000 4210	FY 2001 2550	FY 2002	FY 2003	To Comp	Total Cost 17380
*Represents only part of the funding in SSN AZ2200.	.00									
D. Schedule Profile	FY 1996	~	FY	FY 1997	-	FY 1998		-	FY 1999	•
Award Development Contract (May 96) Design Phase (May 96) Initiate Build Phase (Nov 96) Begin Test Phase (Feb 97)	^ * *	t ,	**	O.	.		J	-	°	1
*Denotes completed effort										
Project D538			Page 2 of 3 Pages	Pages			Exhibi	Exhibit R-2 (PE 0604220A)	3604220A)	
			654							Item 65

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ECT COST	BREAKD	OWN (R-3		DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUM 0604	PE NUMBER AND TITLE 0604220A Arme	PE NUMBER AND TITLE 0604220A Armed, Deployable OH-58D	ole OH-58D		PROJECT D538
A. Project Cost Breakdown Engineering Development Prototype Build/System Integration Developmental Testing Government Support of Developmental Testing	FY 199 <u>6</u> 688	FY 1997 703 115 22	FY 1998	FY 1999		
Operational Testing Government Support of Operational Testing SBIR/STTR Total	. 889	242 20 28 1130				
B. Budget Acquisition History and Planning Information: Not Applicable	cable					
Project D538	Page 3 of 3 Pages	Pages		Exhibit	Exhibit R-3 (PE 0604220A)	€ €
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RDT&E BUDGET ITEM JUST	EM JUS		TION SI	HEET (R	IIFICATION SHEET (R-2 Exhibit)	oit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE NC 0 0 0	PE NUMBER AND TITLE 0604223A Com	PE NUMBER AND TITLE 0604223A Comanche	Ф				
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	284131	331424	282009	371927	441309	586978	634102	634580	Continuing	Continuing
DC72 T800 Engine Engineering Development (LH)	35885	41234	44533	41107	34690	33498	32384	31288	Continuing	Continuing
D2LT Comanche Operational Test	0	0	0	0	36	107	333	768	Continuing	Continuing
D327 Comanche	248246	290190	237476	330820	406583	553373	601385	602524	Continuing	Continuing

Comanche and the T800 growth engine. The Comanche is a multi-mission aircraft optimized for the critical battlefield mission of tactical armed reconnaissance. It provides the same into the Comanche aircraft. Project D2LT includes funding for the operational testing of Comanche to include Comanche simulation accreditation for Limited User era fleet (AH-1, OH-6, and OH-58A/C). Project DC72 provides for development and qualification of the T800 and growth engines and air vehicle support for integration of include training and logistic support. The projects in this program element support research efforts that complete Demonstration/Validation (Dem/Val) prototype efforts and weather/high/hot/stand-off capability) and is a key component on the digitized battlefield in winning the information war. The Comanche will replace the obsolete Vietnam Test and Initial Operational Test & Evaluation. Project D327 provides for development of the airframe, mission equipment package, and integration of the whole system to Mission Description and Budget Item Justification: This program element provides for the development and operational testing and evaluation of the RAH-66 a globally self-deployable attack platform for light/contingency forces. Comanche is the solution to the reconnaissance deficiencies (no night/adverse ransition to the engineering and manufacturing development phase of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604223A)





RDT&E BUDGET ITEM JUST	EM JUS	TIFICAT	TION S	FIFICATION SHEET (R-2 Exhibit)	k-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Jevelopm	ent	PE NI 00 0	PE NUMBER AND TITLE 0604223A Comanche	тіт <u>г</u> Somanch	Ð			d O	PROJECT DC72
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC72 T800 Engine Engineering Development (LH)	35885	41234	44533	41107	34690	33498	32384	31288	31288 Continuing Continuing	Continuing

A. Mission Description and Budget Item Justification: Project DC72 - T800 Engine Engineering Development (LH): This project includes tasks to design, develop and qualify an advanced technology engine. It includes the development and qualification of the T800 and growth engines and air vehicle support for integration of the same into the Comanche aircraft. The growth engine is for the Army's RAH-66 Comanche and other applications.

Acquisition Strategy: Continue work with current contractor leading to FAA certification, military qualification and eventual production.

FY 1996 Accomplishments:

- Continued basic engine air vehicle support 8961
- Continued growth engine development and conducted growth engine Critical Design Review (CDR) Continued contractor development testing 18339
 - 9578
 - 35885

FY 1997 Planned Program:

- Continue basic engine air vehicle support
- Continue growth engine development 13969
- Continue contractor development testing 3663
- Begin manufacturing growth engine for flight test 4079

Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Programs

886 11234

FY 1998 Planned Program:

- Continue basic engine air vehicle support 10475
 - Continue growth engine development 13960
- Continue contractor development testing 12752
- Continue manufacturing growth engines for flight test 7346

Project DC72

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Exhibit R-2 (PE 0604223A)

RDT&E BUDGET ITEM JUST		EM JUST	IFICAT	NO.	IFICATION SHEET (R-2 Exhibit)	R-2 ExI	nibit)		Dγ	DATE F.	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Iring D	evelopme	+	8 0	PE NUMBER AND TITLE 0604223A Com	отп∟е Comanche	he					PROJECT DC72
FY 1999 Planned Program: 7744 Continue basic engine air vehicle support 14974 Continue growth engine development 13678 Continue contractor development testing 4711 Continue manufacturing growth engines for flight test Total 41107	e air vehi ine devel developm ing grow	cle support opment ent testing th engines for	flight test									
B. Project Change Summary FY 1997 President's Budget Appropriated Value			FY 1996 35830 36835		FY 1997 35616 41234	FY 1998 35663	801 m	FY 1999 35531				
Adjustments to Appropriated Value 35885 41234 44533 41107 FY 1998 BES/Pres Bud Request Change Summary Explanation: Funding - FY98 (+8870) and FY99 (+5576) change is primarily due to a realignment of funds between the Comanche air vehicle and the engine, and reductions for savings in matrix support. FY97 (+5618) Congressional increase.	FY98 (+8 I reductio	alue t Funding - FY98 (+8870) and FY99 engine, and reductions for savings	35885 (+5576) cl in matrix su	s change i support.	35885 41234 44533 41 (+5576) change is primarily due to a realignment of func in matrix support. FY97 (+5618) Congressional increase.	44533 e to a realign Congressic	3 gnment c ional inc	41107 of funds betr rease.	veen the C	'omanck	ne air vehicle	and the
C. Other Program Funding Summary:	There ar	There are no other relat	ted RDT&	E or oth	ed RDT&E or other appropriation efforts.	on efforts.						
D. Schedule Profile	-	FY 1996 2 3	4	,	FY 1997 2 3	4	_	FY 1998 2 3	4	_	FY 1999 2 3	4
Continue basic engine air vehicle support Continue growth engine development Continue contractor development testing Begin mfg growth engines for flight test Continue basic engine air vehicle support Continue contractor development testing Continue basic engine air vehicle support Continue basic engine air vehicle support Continue contractor development Continue basic engine air vehicle support Continue mfg growth engines for fit test Continue basic engine air vehicle support Continue growth engine development Continue growth engine development Continue growth engine development Continue growth engine fevelopment	\times \times \times			\times \times			imes imes imes imes			\times \times \times		
Project DC72				Page 3	Page 3 of 10 Pages				Exhibit F	3-2 (PE	Exhibit R-2 (PE 0604223A)	
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RD	T&E PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT		SOST BF	REAKDC	COST BREAKDOWN (R-3)	€	DATE Fe	February 1997	260
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	g and Manu	facturing L	Jevelopment		PE NUMBER AND TITLE 0604223A Com	AND TITLE A Comanche	nche				PROJECT DC72
A. Project Cost Breakdown Product Development Program Management Support Government Furnished Personnel/Equipment/Facilities Test & Evaluation SBIR/STTR Total	reakdown ant ant Support hed Personnel/Eq	uipment/Facili	ities	FY 1996 35400 485 0 0 35885	EY 4(EY 1997 40099 147 0 988 41234	FY 1998 44246 287 0 0 44533	EY 1999 40814 293 0 0			
B. Budget Acquisition History and Planning Information	tion History and	l Planning Inf	<u>ormation</u>								
Performing Organizations Contractor or Contra Government Metho Performing or Fur Activity Vehic	contract Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations (includes Collidacion testing) LHTEC (0453) C/CPFF April 92 LHTEC (8017) C/FFP Jul 85 276821 LHTEC(0518) CPFF Jul 93 460 AVCO (8019) C/FFP Nov 84 128526 SBIR/STTR SBIR/STTR	C/CPFF C/FFP C/FFP CPFF C/FFP	April 92 Jul 85 Jul 93 Nov 84	276821 460 128526	276821 460 128526	156366 276821 460 128526	35400	40099	44246	40814	Cont 0 0 0	Cont 276821 460 128526 988
Support and Management Organizations Comanche PMO & MIPR	agement Organiz MIPR	zations			12364	. 82	147	287	293	Cont	Cont
Gov't Agencies PATS contracts Rail Other Contracts	C/FFP C/FFP Agreement	Sep 87		96 2806	96 2806	400				0 0 0	96 2806 400
Gov't Agencies MIPR	on Organizations MIPR	a		9613	9613						9613
Project DC72				Page	Page 4 of 10 Pages	es		Exhi	bit R-3 (PE	Exhibit R-3 (PE 0604223A)	
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RDT&E PROGRAM ELEMENT/P	GRAM EL	EMENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	REAKDO	JWN (R-	3)	DATE	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ufacturing	Development	PE NUMBER AND TITLE 0604223A Com	AND TITLE A Comanche	nche				PROJECT DC72
Government Furnished Property Contract Method/Type A Item or Funding O Description Vehicle D Product Development Property: None Support and Management Property Gov't Agencies MIPR Test and Evaluation Property: None	e Award or Obligation <u>Date</u> None irty	Delivery <u>Date</u>	Total Prior to FY 1996 13133	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program 13133
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			562173 28399 9613 600185	35400 485 35885	41087 147 41234	44246 287 44533	40814 293 41107	Cont Cont Cont Cont	Cont 9613 Cont Cont
Project DC72		Pa	Page 5 of 10 Pages	les		Exh	Exhibit R-3 (PE 0604223A)	0604223A)	Item 66



ment		ILLICATION SPEET (N-2 EXIIIDIL)	(JIC		Fet	February 1997	97
	PE NUMBER AND TITLE 0604223A Comanche	тіт <u>г</u> Е Somanche	a			4 L I	РRОЈЕСТ D327
COST (In Thousands)	198 FY 1999 ate Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D327 Comanche 237476 290190 237476	7476 330820	406583	553373	601385	602524	602524 Continuing Continuing	Continuing

cavalry system, incorporating significant reductions in personnel and support equipment, capturing the latest combat technologies and capable of accepting upgrades to meet ever-changing threats. It will dominate the battlefield in the close, deep and rear operations; provide a decisive air cavalry capability in day, night, and adverse weather. It A. Mission Description and Budget Item Justification: Project D327 - Comanche: The Comanche helicopter is a highly sustainable and operationally flexible air will be operationally tailorable to regional conflicts and provide the battle commander with timely, detailed reconnaissance information and an unprecedented level of lethality

Acquisition Strategy: Continue work with current contractor leading to Engineering and Manufacturing Development and eventual production.

FY 1996 Accomplishments:

- 24825 Began digitization effort
- 176357 Continued Dem/Val prototype engineering development
- 38258 Conducted first flight, prototype # 1 and continued flight test program
 - 8806 Continued manufacturing of prototype # 2
 - Total 248246

FY 1997 Planned Program:

- 29019 Continue digitization effort
- 203835 Continue Dem/Val prototype engineering development
 - 40440 Continue flight test program for prototype #1
 - 9915 Complete manufacturing of prototype #2
- Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Programs 1869
 - otal 290190

Project D327

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R	-2 Exhibit		DATE	February 1997	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604223A Com) тіт∟Е Comanche			PR D3	PROJECT D327
 FY 1998 Planned Program: 23748 Continue digitization effort 158687 Continue Dem/Val prototype engineering development 39371 Conduct first flight of prototype #2 and continue flight test program for prototype #1 8299 Update prototypes #1 and #2 7371 Begin manufacturing Early Operational Capability (EOC) aircraft Total 237476 	t program for prototy aircraft	pe #1				
 FY 1999 Planned Program: 33082 Continue digitization effort 183236 Continue Dem/Val prototype engineering development 58370 Continue flight test program for prototypes #1 and #2 8615 Continue to update prototypes #1 and #2 47517 Continue manufacturing Early Operational Capability (EOC) aircraft Total 330820 	C) aircraft					
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value -14022	. <u>FY 1997</u> 253028 290190	<u>FY 1998</u> 253127	FY 1999 348693			
	290190	237476	330820	ween the Co	manche air vehicle	nd the
engine, and reductions for savings in matrix supp	in matrix support. FY97 (+37162) Congressional increase.	Congressional	ncrease.			
C. Other Program Funding Summary FY 1996 FY 1997 E APA	FY 1998 FY 1999	FY 2000 EN	FY 2001 FY 2002		Total FY 2003 Cost	· · · · · · · · · · · · · · · · · · ·
A08300 Comanche			104	104128 14	149249 Cont	<u> </u>
Project D327	Page 7 of 10 Pages		Ш	Exhibit R-2	Exhibit R-2 (PE 0604223A)	
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Budget Activity 5 - Engineering and Manufacturing Development D. Schedule Profile 1 2 3 Begin digitization effort Continue Dem/Val prototype engineering development Conduct first flight, prototype #1 and continue flight test program X	ent 4 1	PE NUMBER AND TITLE 0604223A Com	O TITLE Comanche			PR	
-× ×						Ď	РRОЈЕСТ D327
· × ×		FY 1997	-	FY 1998	1	FY 1999	4
e engineering for for prototype #2 e engineering type #2 and for 2 Operational e engineering for for prototypes reagneering elengineering reagneering	× × × ·		× × ×	n	* * * * * * * * * * * * * * * * * * *		t
Project D327	Page	Page 8 of 10 Pages			Exhibit R-2 (P	Exhibit R-2 (PE 0604223A)	Item 66

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ROJECT	COST BI	REAKDO	JWN (R-	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	ent	PE NUMBER AND TITLE 0604223A Com	AND TITLE	nche			id O	PROJECT D327
A. Project Cost Breakdown Product Development Program Management Support Government Furnished Personnel/Equipment/Facilities Test & Evaluation SBIR/STTR Total	EY 1996 223182 23111 1395 558 248246		EY 1997 258742 18679 3393 2395 6981 290190	EY 1998 215488 18080 1446 2462 237476	EX 1999 306699 18087 2717 3317			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contract Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Boeing Sikorsky C/CPIF April 91	(<u>a</u>	1724958	223182	254596	211393	302708	Cont	Cont
JPO A004 Product Develop-				4146	4095	3991	Cont	Cont
(Other) Other Completed		370288	0	0	0	0	0	370288
Contracts SBIR/STTR				6981				6981
and Management Organizations C/FFP Sep 87	0	32954	4822	4723	2000	2000	Cont	Cont
SysTeam C/FFF Oct91 15181 PATS contracts C/FFP	18161	12461	07/7	1147	1500	1500	Cont	Cont
		12208	3613	3439	1815	1604	Cont	Cont
'aluation Sies		7463	558	2395	2462	3317	Cont	Cont
Project D327	Pag	Page 9 of 10 Pages	jes.		Exh	Exhibit R-3 (PE 0604223A)	0604223A)	
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RDT&E PROG	RDT&E PROGRAM ELEMENT/PROJECT	OJECT COST BREAKDOWN (R-3)	REAKDO	WN (R-	3)	DATE F (February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	acturing Development	PE NUMBER AND TITLE 0604223A Com	AND TITLE A Comanche	nche				РКОЈЕСТ D327
Government Furnished Property Contract								
Method/Type Item or Funding Description Vehicle	Award or Obligation Delivery <u>Date</u> <u>Date</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Product Development Property: None Support and Management Property Other Gov't MIPR Agencies	ne '	10190	1395	3393	0	0	Cont	Cont
Test and Evaluation Property Other Gov't MIPR Agencies					1446	2717	Cont	Cont
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		2095246 135633 7463 2238342	223182 24506 558 248246	265723 22072 2395 290190	215488 18080 3908 237476	306699 18087 6034 330820	Cont Cont Cont	Cont Cont Cont
Project D327		Page 10 of 10 Pages	žes		Exhi	Exhibit R-3 (PE 0604223A)	0604223A)	77 mm.1

	RDT&E BUDGET ITEM JUS	EM JUS	. —	IFICATION SHEET (R-2 Exhibit)	HEET (R	-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGI 5 - E	BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NI 000	PE NUMBER AND TITLE 0604270A Elec	TITLE lectroni c	PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development	(EW) De	velopme	ınt	
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	62250	73886	66212	51490	11499	10334	23712	31636	Continuing	Continuing
DL12	Signals Warfare Development	13360	16065	13874	7228	5239	5650	15583	17545	Continuing	Continuing
DL15	Army Reprogramming and Analysis Team (ARAT)	2830	3764	4024	3323	0	0	0	0	0	17670
DL16	DL16 TROJAN Development	517	1261	1278	1333	0	0	0	0	0	4389
DL18	DL18 SHORTSTOP Development	6800	9151	0	0	0	0	0	0	0	24475
D665	D665 Aircraft Survivability Equipment Development	38743	43645	46870	37248	6144	4684	8129	14091	Continuing	Continuing
D2VT	Suite of Integrated Infrared Countermeasures Operational Test (SIRCM)	0	0	166	2358	116	0	0	0	0	2640

infrared/optical battlefield surveillance systems and electronically fused munitions. Existing Army EW systems must be replaced or upgraded to maintain their capability in Mission Description and Budget Item Justification: This program element encompasses engineering and manufacturing development for tactical electronic warfare (EW), the face of threat technical advancements. This program element satisfies requirements for brigade, division, corps and higher commanders to conduct electronic warfare to signals warfare (SW), aircraft survivability equipment (ASE), battlefield deception, rapid software reprogramming and protection of personnel and equipment from hostile meet tactical and Special Electronic Mission Aircraft (SEMA) requirements, attach/scout, and assault/cargo mission requirements. Signals Warfare Development provides artillery. EW encompasses the development of tactical EW equipment and systems mounted in both ground and air vehicles. The systems under this program provide the embedded in offensive and defensive weapon systems. The projects in this PE are in the engineering and manufacturing development phase of the acquisition cycle and configured into small aperture antenna arrays; search and acquisition capabilities for unattended signal collectors; and new digital intelligence collection, processing and for development of multifunction ground based and airborne intelligence and electronic warfare systems. The High Value Asset Defense System will provide effective dissemination technology. The ARAT Project will develop, test and equip an Army wide infrastructure capable of rapidly reprogramming electronic combat software applications in advanced threat signals processing and prototype software upgrades; high frequency (HF) algorithms for compact antenna array technology (CAAT) protection of personnel and equipment from electronically fused munitions. TROJAN developments will complete Proof-of-Principle R&D for specific TROJAN Army with the capability to degrade or deny hostile forces the effective use of their communications, countermortar/counterbattery radars, surveillance radars, therefore are correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604270A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	FION S	HEET (R	-2 Exhi	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Jevelopm	ent	PE NI 090	PE NUMBER AND TITLE 0604270A Elect	птге lectronic	: Warfare	(EW) De	E NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development		PROJECT DL12
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DL12 Signals Warfare Development	13360	16065	13874	7228	5239	5650	15583	17545	17545 Continuing Continuing	Continuing

A. Mission Description and Justification: Signals Warfare Development provides for a family of integrated ground-based and heliborne intelligence and electronic warfare threat command and control, fire control, and air defense centers. The GBCS will be used in two platform configurations. The GBCS-Light (GBCS-L) will be deployed on a which provides for a material change to the existing heliborne QUICKFIX communications intercept, collection, processing, direction finding, and jamming system and will Attack against threat communications and non-communications signals; enhances the Commander's ability to outmaneuver and destroy the enemy by locating or jamming highly mobile multipurpose wheeled vehicle (HMMWV) in support of Light Divisions. The GBCS-Heavy (GBCS-H) will be deployed on a tracked vehicle in support of be deployed to Army Divisions and Armored Cavalry Regiments (ACR). Configured in a Blackhawk Helicopter (EH-60A), it provides the moving platform necessary to Armored and Mechanized Infantry Divisions. The third platform of the Intelligence and Electronic Warfare Common Sensor System is the Advanced QUICKFIX (AQF) common sensor systems. The Ground Base Common Sensor (GBCS) is an intercept and emitter location system. It provides division commanders with the capability to provides for engineering and manufacturing development (EMD) and testing of Intelligence and Electronic Warfare Common Sensor (IEWCS) Subsystems and Systems search, intercept, listen to, precisely locate for hard-kill or order-of-battle resolution, or render ineffective through electronic attack, threat command and control and fire conventional and Low Probability of Intercept (LPI) communications and non-communications emitters and jam enemy conventional and LPI communications emitters. control communications nets. It also identifies and precisely locates threat countermortar and counterbattery ground surveillance radar emissions, and identifies enemy architecture feature satisfies the Army requirement to conduct tactical ground Communications Intelligence, Electronic Intelligence, Electronic Support, and Electronic GBCS is an evolutionary system which is intended to continually overmatch threat capabilities through a continuous modernization philosophy. Modular components, commercial standards, and open architecture features facilitate change in a cost effective manner of changing parts via P3 vice whole system replacement. This open provide for location accuracies sufficient for "steel on target" requirements, as well as for extension of radio Line of Sight (LOS) against target emitters. This project leading to Milestone III and product improvement of systems after initial production. The Subsystems are:

- targeting. TACJAM-A consists of state-of-the-art modular and scaleable Electronic Support Measures (ESM) and Electronic Countermeasures (ECM) subsystems configured suppressing enemy fire control and command and control (C²) nets at critical points in the battle; provide electromagnetic overwatch of the threat C² spectrum inclusive of both conventional and modern modulations (LPI); freeze the enemy in place by jamming C²; and eliminate enemy counterfire by locating High Value Targets (HVTs) for a. The Tactical and Communication Jammer (TACJAM-A) will enhance the Division Commander's ability to outmaneuver and kill the enemy by isolating and for use on a variety of air and ground prime movers (tracked, wheeled and heliborne).
 - b. The Communication High Accuracy Location System (CHALS-X) provides the targeting capability required to support the Division Commander's requirement to locate and kill the enemy by providing location of high value targets. Airborne systems mixed with ground based systems will be capable of precisely locating enemy weapon systems and units (regardless of whether the enemy uses conventional or modern radios) producing target locations sufficiently accurate for first round fire for effect by organic artillery.
 - communication (radar) battlefield threat emitters. While operating in a fully automatic mode, it will enhance the Division Commander's ability to outmaneuver and kill the c. The Common Modules ELINT Subsystem (CMES) provides search, intercept, direction finding (DF), precision location and analysis of the primary non-

Project DL12

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Exhibit R-2 (PE 0604270A)

RDT&E BUDGET ITEM JUSTIFICATIO	STIFICATION SHEET (R-2 Exhibit)	DATE February	7 1997
BUDGET ACTIVITY	PE NUMBER AND TITLE		PROJECT
5 - Engineering and Manufacturing Development	0604270A Electronic Warfare (EW) Development	evelopment	DL12

enemy by specifically identifying HVTs such as enemy countermortar, and counterbattery ground surveillance radar at critical points in the battle and will provide precise emitter locations with targeting accuracy. The United States Marine Corps is utilizing the same subsystems as the GBCS and configuring them in a Light Armored Vehicle as a part of the Mobile Electronic Warfare Support System (MEWSS) improvement program. This unclassified project is joint with the National Security Agency's Defense Cryptologic Program (DCP), Program Element 030885G, which provides a portion of the funds required for the development of the precision location subsystem and system integration of GBCS-L and GBCS-H.

feature satisfies the Army requirement to conduct tactical ground communications intelligence, electronic intelligence, electronic support, and electronic attack against threat countermortar and counterbattery ground surveillance radar emissions, and other communications nets. The system is specifically designed to ensure transportability, prime battle resolution, or render ineffective through electronic attack, threat command and control and fire control communications nets, and identify and precisely locate threat discretion - the latest, most modern type of hostile modulations and transmissions techniques at the key time and place on the battlefield. GBCS is an evolutionary system communications and non-communications signals; enhances the commander's ability to outmaneuver and destroy the enemy by locating or jamming threat command and Acquisition Strategy: GBCS provides the commanders of Divisions, Brigades and ACR with an organic capability to listen to, precisely locate for hard-kill or order-ofarchitecture features facilitate change in a cost effective manner by enhancing software or changing parts via P³I vice whole system replacement. This open architecture which is intended to continually overmatch threat capabilities through a continuous modernization philosophy. Modular components, commercial standards, and open mover maintainability, and over terrain mobility equal to that of the supported divisions, regiments, and brigades while exploiting or eliminating - at the commander's control, fire control, and air defenses centers.

FY 1996 Accomplishments:

- 241 Completed TACJAM-A ESM Development
 - 7401 Continued (GBCS/AQF) Integration effort
- Fielded EMD Models of GBCS and AQF Systems to Task Force XXI
- Improved GBCS/AQF by including other advanced communication modifications/techniques as well as advanced signal analysis and improved
 - signal sorting parameters
- Began integration of TACJAM-A ECM into AQF
- Conducted operation demonstration customer test/development test (OCDT) on GBCS
 - 3044 High level software design and initiated hardware development
- 925 Provided contractor maintenance support for Task Force XXI
- Total 13360

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Exhibit R-2 (PE 0604270A)



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997	
BUDGET ACTIVITY 5 - Engineering	BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development	evelopment DL12	5
FY 1997 Planned Program:	rogram: Conduct special in-process review (SIPR) on AQF ECM Conduct special in-process review (SIPR) on AQF ECM Continue GBCS/AQF improvements to include advanced digital modulations and techniques, remote collection techniques, finish ECM subsystem integration into AQF and begin integration into GBCS-L and GBCS-H, other product improvements resulting from Task Force XXI GBCS-L/AQF software fixes Conduct training and provide contractor depot repair in support of IOT&E for GBCS-L Contractor maintenance support for Task Force XXI ADEXJAM incremental Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)	igital modulations and techniques, remote collection ted GBCS-H, other product improvements resulting fron port of IOT&E for GBCS-L	rhniques, finish ECM subsystem 1 Task Force XXI	
FY 1998 Planned Program:	Begin integration of ECM subsystem into GBCS-L and GBCS-H Complete signal analyzer upgrade and provide for production line cutover Start GBCS/AQF pre-planned product improvement (P31); continued advanced digital modulations, reconfigurable tuner, co-channel analysis, analog-to-digital converter, improved signal analysis, enhanced sorting parameters capability and improve HF tuners OCDT for GBCS-H and AQF Conduct training and provide contractor depot repair in support of IOT&E for GBCS-H and AQF Conduct Milestone III for GBCS-L Conduct Milestone III for GBCS-L Conduct Milestone III for GBCS-L Conduct Resing on previously implemented improvements Conduct testing on previously implemented capabilities and remote collection	CS-H continued advanced digital modulations, reconfigurabl need sorting parameters capability and improve HF tune port of IOT&E for GBCS-H and AQF s and remote collection	e tuner, co-channel analysis,	
Project DL12	Pag	Page 4 of 28 Pages	Exhibit R-2 (PE 0604270A)	67

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TITE	M JUS	TIFICAL	ION SE	HEET (R	-2 Exhit	oit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ing De	velopm	ent	PE N 0 00	PE NUMBER AND TITLE 0604270A Elect	ਮਸਮ Electronic Warfare (EW) Development	Warfare	(EW) De	velopmer		PROJECT DL12
B. Project Change Summary FY 1997 President's Budget Request Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request:			EY 1996 13692 13831 -471 13360	E	<u>7 1997</u> 16414 16065 16065	EY 1998 16223 13874	<u>FY 1999</u> 9884 7228	614 8			
Change Summary Explanation: Funding: FY 1998/FY 1999: Funding reductions from President's Budget are the result of Army Science Board report (Reengineering the Institutional Army, the Acquisition Perspective) recommended reductions (FY 98 -2349/FY 99 -2656) Schedule: IOT&E for GBCS-L rescheduled from 4QFY96 to 4QFY97 due to integration problems. IOT&E for AQF rescheduled from 4QFY97 to 3QFY98 due to subsystem availability.	ing reduct scommen heduled f	tions from ded reduct from 4QFY	President's I ions (FY 98 796 to 4QFY	3udget are th -2349/FY 99 97 due to int	ne result of / 9 -2656) legration pro	Army Science	Board repor &E for AQF	t (Reengine rescheduled	ering the Ins	titutional Ar 97 to 3QFY!	my, the 98 due to
C. Other Program Funding Summary		FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Compl	Total Cost
OPA (SSN BZ7326) OPA (SSN BZ9753) APA (SSN AB3000) RDTE Budget Activity 7		45470 0 37142 18949		26817 0 38140 19324	37269 0 37301 19624	88615 6179 55833 19724	90635 12561 68509 20893	93674 13083 78011 20924	107640 21987 86141 21260	Cont'd Cont'd Cont'd Cont'd	Cont'd Cont'd Cont'd Cont'd
DCP PE 030885G, GBCS RDTE Budget Activity 7 DCP PE 030885G, CHALS-X		3038	2998	4165	5515	6046	6828	4201	4285	Cont'd	Cont'd
D. Schedule Profile		FY 1996 2 3	6 3 4	1 2	FY 1997 2 3	4 1	FY 1998 2 3	8 £	-	FY 1999 2 3	4
Acquisition Milestones Award Limited Production Contract Milestone III on GBCS-L Milestone III on AQF Milestone III on GBCS-H Complete Development of Advanced	*					×		××			×
T&E Milestones Begin IOTE on GBCS-L		4.4				×					
Project DL12				Page 5 of 28 Pages	28 Pages			Exhibi	Exhibit R-2 (PE 0604270A)	604270A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	I JUSTIFICATIO	ON SHEET (R-2 Exhib	it)	DATE February 1997	, 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	elopment	PE NUMBER AND TITLE 0604270A Elect	ТПТЕ Electronic	Warfare (EW)	ЭППЕ Electronic Warfare (EW) Development	PROJECT DL12
D. Schedule Profile	FY 1996	FY 1997	4	FY 1998 2 3	FY 1999 4 1 2 3	9 4
Complete IOTE on GBCS-L Conduct IOTE on AQF Conduct IOTE on GBCS-H Contract Milestones Field RDT&E Model of GBCS-L SIPR - AQF ECM Task Force XXI	**			, , , ,		
*Denotes completed milestone						
		·				
Project DL12	Pc	Page 6 of 28 Pages		Û	Exhibit R-2 (PE 0604270A)	
		671				Item 67

RDT&E PROGRAM ELEMENT/PROJECT	OGRAM EL	EMENT/P	ROJECT	COST B	REAKDO	COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ınufacturing	Developme	nt	PE NUMBER AN 0604270A	- -	onic Warf	ਮਸਮਿ Electronic Warfare (EW) Development	evelopm		PROJECT DL12
A. Project Cost Breakdown Primary Hardware Development Software Development Systems Engineering Integrated Logistics Support Quality Assurance; Reliability; Maintainability & Availability Developmental Test & Evaluation Government Engineering Support Program Management Support Program Management Personnel SBIR/STTR Total B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract	daintainability & and Planning Ir	Availability iformation	EY 1996 3504 3216 421 841 672 784 1658 1658 1658		FY 1997 2627 6641 1739 1032 825 962 713 326 822 378 16065	EY 1998 3750 4283 703 894 715 2824 355 98 . 252	EY 1999 2983 2216 365 365 371 433 199 55 7228			
nent ing	be	Performing Activity	Project Office	Total Prior to	100¢	EW 1007	EV 1008	EV 1000	Budget to	*Total
Activity Vencie Product Development Organizations	<u>Date</u> ations	EAC ++	EAC #	FY 1990	FY 1990	FY 1997	F Y 1998	F Y 1999	Complete	Frogram
EL	Jun 89	216686	216334	205051	5880	1900	985	0	0	213816
1/Loral	Jun 90	52997	52997	47623	300	0 0001	0 0	0 0	0	47923
ESI C-CPAF FMC SS-CPFF	Sep 91 Sep 90	189463 15913	186424	103764	085 1436	1900	700	500	0	16913
8-0	Nov 95	94577	94577	0	887	6337	8974	6323	Cont'd	Cont'd
(GBCS/AQF) Loral-AD/EXJAM SS-CPIF	Mar 96			0	0	1900	0	0	0	1900
Misc. SBIR/STTR				2638	250	378	10	0 3	Cont'd 0	Cont'd 378
Support and Management Organizations QuesTech FFP May	inizations May 95				630	625	08	15	Cont'd	Cont'd
Project DL12			Pas	Page 7 of 28 Pages	ses		Exh	Exhibit R-3 (PE 0604270A)	0604270A)	
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RDT&	E PROG	RAM EL	RDT&E PROGRAM ELEMENT/P	ROJECT COST BREAKDOWN (R-3)	COST B	REAKDO	JWN (R-	3	DATE Fe	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	nd Manu	facturing	Developme	l t	PE NUMBER AN 0604270A		ЭТІТІЕ Electronic Warfare (EW) Development	are (EW) I	Developm	1	PROJECT DL12
Contractor or Cor Government Met Performing or F Activity Vel In-House Dir CECOM MII	Contract Method/Type or Funding Vehicle Direct	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u> **	Project Office <u>EAC</u> **	Total Prior to FY 1996 5566 4904	<u>FY 1996</u> 1724 1026	FY 1997 1515 0	FY 1998 625 0	FY 1992 380 0	Budget to Complete Cont'd Cont'd	*Total Program Cont'd Cont'd
Test and Evaluation Organizations EPG/Ft. Hood MIPR	ganizations PR				2035	542	510	2500	7	Cont'd	Cont'd
Government Furnished Property Contract Contract Method/Type Award or Item or Funding Obligation Delivery Product Development Property NOTE: TACJAM-A/CHALS-X/EFVS, Sanders-AEL/IBM-Loral/FMC, respectively, identified above as Product Development Organizations Support and Management Property: N/A Test and Evaluation Property: N/A	ted Property Contract Method/Type or Funding Vehicle tt Property CHALS-X/EFV ement Propert	Award or Obligation <u>Date</u> VS, Sanders-A y: N/A	Delivery <u>Date</u> \EL/IBM-Loral/	FMC, respecti	Total Prior to <u>FY 1996</u> vely, identifie	<u>FY 1996</u> d above as Pro	FY 1997 oduct Develop	FY 1998 oment Organiz	<u>FY 1999</u> zations	Budget to <u>Complete</u>	Total Program
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	pment anagement ation				371453 10470 2035 383958	9438 3380 542 13360	13415 2140 510 16065	10669 705 2500 13874	6826 395 7 7228		411801 17090 5594 434485
*Total Program does not includes funding from other sources. **Project Office EAC includes Marine Corps and National Security Agency funds which are not included in the Total Program (Army budget).	t includes fu cludes Marir	nding from ot te Corps and l	her sources. National Securit	y Agency fund	nds which are not in	ot included in	the Total Prog	gram (Army ł	ny budget).	(A) 70 40 70 60 60 60 60 60 60 60 60 60 60 60 60 60	
Project DL12				7.7	Ke o of 201 ag	Sea Sea			ווטונ וא-ט (ד ב	(A012+000	Item 67

RDT&E BUDGET ITEM JUS	EM JUS		TION SE	FIFICATION SHEET (R-2 Exhibit)	≀-2 Exhi	bit)		DATE Fet	February 1997	260
BUDGET ACTIVITY			PE NI	PE NUMBER AND TITLE	TITLE					PROJECT
5 - Engineering and Manufacturing Developme	evelopm	ent	090	4270A E	ectronic	: Warfare	(EW) De	0604270A Electronic Warfare (EW) Development		DL15
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DL15 Army Reprogramming and Analysis Team (ARAT)	2830	3764	4024	3323	0	0	0	0	0	17670

A. Mission Description and Justification: Army Reprogramming and Analysis Team (ARAT) for Target Sensing Systems (TSS) project will design, develop, implement, protection systems. The project focuses on advanced information management technologies to: automate the threat recognition process; evaluate the operational impact of equipment; automated intelligence collection systems and jammers; advanced threat sensors for air defense, artillery and missile applications, and use as vehicle /troop selfsystems. ATSS are those tactical weapons and sensor systems which rely on embedded, well-defined target or emitter signature data for specific identification. Systems supported by this project include but are not limited to: radar warning receiver and jammer sub-systems of attack, scout, utility and SEMA aircraft; aircraft survivability test, equip and institutionalize an Army-wide infrastructure capable of rapidly reprogramming electronic combat software embedded in offensive and defensive weapon threat changes on inventoried sensor; develop, test and evaluate software to counter the change; develop tactical loading devices for deploying or deployed forces; and institutionalize the infrastructure to accomplish these tasks as well as distribute/disseminate the new software.

electronic combat software embedded in offensive and defensive weapons systems. The program requirements for software engineering, development, support equipment Acquisition Strategy: The ARAT to TSS project will design, develop, implement, test, equip and institutionalize all Army-wide infrastructure capable of reprogramming major program events such as the test and evaluation of off-the-shelf and developmental loading devices, the completion of connectivity of a secure Wide Area Network engineering acquisition, operational training and test and evaluations support will be acquired by the use of time and material contracts. This strategy will further such with all reprogramming centers and the development of flagging models for specific electronic combat survivability systems.

FY 1996 Accomplishments:

Evaluated hardware/software and developed measurement and signature intelligence (MASINT) on-line database access capability Upgraded ARAT communications systems

Expanded on the application of Electronic Intelligence (ELINT) flagging models for additional Mission Data Sets

FY 1997 Planned Program:

1517 Modify or develop database management tools for ADA, IEW, Fire Support and Armor TSS

Test and evaluate off-the-shelf and developmental loading devices for ADA, IEW, Fire Support and Armor TSS 1120

Initiate study on the feasibility of electronic broadcast reprogramming

Project DL15

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Exhibit R-2 (PE 0604270A)



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (I	२-2 Exhibit)	DATE	February 1997	1997
BUDGET ACTIVITY 5 - Engineering	BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270A Elect	тпсе Electronic War	DITILE Electronic Warfare (EW) Development	pment	PROJECT DL15
FY 1997 Planned F 380 280 Total 3764	 FY 1997 Planned Program: (continued) 380 Improve or modify ARAT flagging capability for ELINT systems 280 Enhance MASINT database on-line capability 92 Small Business Innovation Research/Small Business Technology 'Total 	ity for ELINT systems ity Business Technology Transfer (SBIR/STTR)	JIR/STTR)			
FY 1998 Planned Program:	integration of Electro-optic/Infrared p and design communications archite o implement support plans for PM, A levelopment of specific flagging mo pment of Multi-Service Electronic ((EO/IR) based systems into reprogramming infrastructure curre paths to support CONUS and OCONUS field unit conviation Electronic Combat (SIRFC to AMPS interface) dels for AN/APR-39A(V)2 Radar Warning Receiver Combat Secure Web Site.	gramming infrastruc d OCONUS field un C to AMPS interface Warning Receiver	ture it communications :)		
FY 1999 Planned Program:	implementation of support plans for devaluate the communications archi Flagging Model for the AN/APR-3' lagging Model for the Suite of Integ p training materials for commanders	r PM, Aviation Electronic Combat (SIRFC to AMPS tecture paths to support CONUS to OCONUS field u9A(V)2 Radar Warning Receiver rated RF Countermeasures (SIRFC) staff & unit level personnel (Warfighters Handbook)	(SIRFC to AMPS in o OCONUS field uni	nterface) it communications		*
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	Summary FY 1996 Budget 2903 2933 2933 opriated Value -103 equest 2830	FY 1997 3845 3764 3764	FY 1998 4331 4024	<u>57 1999</u> 3596 3323		
C. Other Program l	C. Other Program Funding Summary: Not applicable.					
Project DL15	Pa	Page 10 of 28 Pages		Exhibit R-2 (F	Exhibit R-2 (PE 0604270A)	Item 67
		6/5				

RDT&E BUDGET ITEM JUSI	ITEM JU	STIFI	SATIC	IIFICATION SHEET (R-2 Exhibit)	T (R-	Exhil	oit)		<u>o</u>	DATE Febr	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	g Develop	ment		PE NUMBER AND TITLE 0604270A Elect	R AND TIT	LE ctronic	Warfai	e (EV) Dev	ਹਸπ∟ Electronic Warfare (EW) Development		PROJECT DL15
D. Schedule Profile	FY 1996		4	FY 1997 2 3		4	FY 1998 2 3	998 3	4	1 2	FY 1999 2 3	4
Test and evaluate off-the-shelf and developmental loading devices for	**											
aviation combat equipment. Modify or develop database management		**										
tools for aviation combat equipment. Initiate study on the feasibility of		. ,	×									
electronic broadcast reprogramming. Modify or develop database management			×		×							
Armor TSS												
Test and evaluate off-the-shelf and				×	~	×						
IEW, Fire Support and Armor TSS Initiate study on the feasibility of					×	×						
electronic broadcast reprogramming Thursove or modify ARAT flagging			×			×						
capability for ELINT systems Enhance MASINT database on line				*	×							
capability				¢	<							
Integrate Electro-optic based systems into								×	×			
Design, develop and test communications						×			×			
architecture paths to support CONUS to OCONUS field unit communications.												
Begin to implement support plans for PM, Aviation Electronic Combat (SIRFC to						×			×			
AMPS interface) Regin development of specific flagoring		•				×			×			
models for AN/APR-39A(V)2 Radar Warning Receiver												
			Ċ	717.200					- 	C. Hihit B 2 (DE 0604270A)	(40704)	
Project DL15			Fa	rage 11 of 20 rages	ages				TX IIIDIL	7-7 (PE 00)	74270A)	

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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ng Development	PE NUMBER AND TITLE 0604270A Elect	TITLE Electronic	Э ТІТLE Electronic Warfare (EW) Development	N) Deve	lopment		PROJECT DL15
D. Schedule Profile	FY 1996	FY 1997 2 3	4	FY 1998 2 3	4	FY 1 2	1999 3	4
Development of Multi-Service Electronic Combat Secure Web Site.	1			×	×	ı		
Finalize implementation of support plans for PM, Aviation Electronic Combat						×		×
(SIRFC to AMPS interface) Test and evaluate the communications						×		×
architecture paths to support CONUS to OCONUS field unit communications	5							
Finalize Flagging Model for the AN/APR-						×	×	
Begin Flagging Model for the Suite of						×		×
Integrated RF Countermeasures (SIRFC) Develop Training Materials for							×	×
Commanders Staff & Unit level personnel (Warfighters Handbook)								
*Denotes a completed effort								
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rioled Drib	22.7	7 14 0/ 40 1 USES			ראווווווווו	7 1 2000	202	Item 67

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RDT&E PROGRAM ELEMENT/PRO	ECT CC	ROJECT COST BREAKDOWN (R-3)	DOWN (R-3	(February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	0	PE NUMBER AND TITLE 0604270A Elect	E tronic Warfa	PE NUMBER AND TITLE OCCUPIONIC Warfare (EW) Development	pment	PROJECT DL15
A. Project Cost Breakdown Government Engineering Support Contract Engineering Support Contract Engineering Support Development Support Equipment Acquisition Operational Training PM Support Test and Evaluation Travel SBIR/STTR	EY 1996 425 1570 90 150 300 200 95	FY 1997 510 1837 575 150 300 200 100 92	EX 1998 511 1488 600 200 700 300 4024	EY 1999 524 949 600 150 700 200 200		

B. Budget Acquisition History and Planning Information: Not applicable

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Exhibit R-3 (PE 0604270A)

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Project DL15



RDT&E BUDGET ITEM JUS	EM JUS		TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NI 0 0 (PE NUMBER AND TITLE 0604270A Elect	E NUMBER AND TITLE 3604270A Electronic Warfare (EW) Development	: Warfare	(EW) De	velopme		РRОЈЕСТ DL16
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DL16 TROJAN Development	517	1261	1278	1333	0	0	0	0	0	4389

A. Mission Description and Budget Item Justification: This project is a Tactical Intelligence and Related Activities (TIARA) program. A key factor in modern warfare is the ability to collect, process and use information about an adversary while preventing him from obtaining similar information. TROJAN is a combined operational and real-time intelligence data from various sources; it forms the intelligence needed to issue orders inside the threat decision cycle. To that end, it is imperative the TROJAN readiness mission system which uses advanced networking technology to provide seamless rapid radio relay, secure communications to include voice, data, facsimile, and The process that will enable the United States to win the battlefield information war is referred to as digitization. This capability will allow us to process and disseminate evaluates new digital intelligence collection, processing and dissemination technology using the fielded TROJAN systems, prior to the acquisition of those technologies. electronic reconnaissance support to U.S. forces throughout the world. TROJAN operations may be easily tailored to fit military intelligence unit training schedules and surged during specific events to involve every aspect of the tactical intelligence collection, processing, analysis and reporting systems. This project engineers, tests and system keep pace with digitization initiatives in order to respond aggressively to the emerging intelligence communication threats.

Acquisition Strategy: Competitive contract award utilizing firm fixed price and best value selection procedures for engineering and manufacturing development.

FY 1996 Accomplishments:

• 12	123 Conducted operational test, evaluation and engineering of video compression/processing technologies to the TROJAN intelligence processing
	workstation
. 39	394 Performed operational evaluation of specific TROJAN applications for non-standard modulations using digital signal processing technologies
Total 517	
FY 1997 Planned Program:	
37.	375 Continue operational evaluation on specific TROJAN applications for non-standard modulations techniques using digital processing technologies

T. T. 7.7. Transport of the	1 5 5 17	
•	375	375 Continue operational evaluation on specific TROJAN applications for non-standard modulations techniques using digital processing technologies
		(1Q97-4Q97)
•	328	Complete operational test, evaluation and engineering of video compression/processing technologies on fielded TROJAN systems
•	527	Acquire previously developed specialized software for classified pre-processing and enhanced signal processing algorithms
•	31	Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)
Total	1261	

Project DL16

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Exhibit R-2 (PE 0604270A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICAT	ION SHE	ET (R-	2 Exhik	oit)		DATE Feb i	February 1997	760
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developme	int "	PE NUMBER AN 0604270A		rle ectronic	Warfare	(EW) De	ס חדונה Electronic Warfare (EW) Development		PROJECT DL16
 FY 1998 Planned Program: 267 Operational test and evaluation of previously developed specialized software and enhanced signal processing algorithms 500 Implement and test Area Common User System (ACUS) Interfaces technology for the TROJAN intelligence network 511 Acquire and apply multi-bandwidth compression algorithm technology to maximize TROJAN intelligence collection network throughput Total 	ion of previous mmon User Sy idwidth compre	ly developed stem (ACUS) sssion algorit	specialized so) Interfaces tec hm technology	oftware and chnology fo y to maxim	enhanced sort the TRO.	signal proces IAN intellige N intelligenc	sing algorit nce networ e collection	thms k n network thro	oughput	
 FY 1999 Planned Program: 512 Continue operational assessment of multi-bandwidth compression algorithm technology to maximize TROJAN intelligence collection network throughput 321 Apply IEW dissemination applications based on Task Force XXI lessons learned 500 Apply tactical transcription functionality at the RSOCs to support tactical to national partnership Total 1333 	nent of multi-l oplications base functionality at	oandwidth co ed on Task Fo the RSOCs t	andwidth compression algorithm technology to maxid on Task Force XXI lessons learned the RSOCs to support tactical to national partnership	orithm tecl ons learned ical to natic	nnology to 1	maximize TF ship	OJAN inte	lligence colle	ction netw	ork
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request		EX 1996 531 536 536 -19	FY		FY 1998 1363 1278	FY 1999 1430 1333	3 0 3			
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998 F	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
OPA BA0331 OPA BA0333	3176 15336	2114 2085	3349 479	3648 478	4505	4659	4770	4896	Cont'd	Cont'd
Acquisition Milestones Acquisition Milestones Contract Award for Video Contract Award for Non-Standard Mod using Digital Signal Processing Tech. Contract Award for Spec Software for Sig Proc Algorithms	FY 1996 2 3 X* X*	4	FY 1997 1 2 3		1	FY 1998 2 3	8 & &	T 2	FY 1999 2 3	4
Project DL16		1	Page 15 of 28 Pages	Pages			Exhibi	Exhibit R-2 (PE 0604270A)	04270A)	
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RDT&E BUDGET ITEM JUSTIFICATION	FIFICATION SHEET (R-2 Exhibit)	DATE February 1997	ry 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270A Electronic Warfar	אוזדוב Electronic Warfare (EW) Development	PROJECT DL16
D. Schedule Profile FY 1996	FY 1997 FY 1998	FY	666
Acquisition Milestones 1 2 3 4 1	4 1	3 4 1 2	3 4
Contract Award for enhanced Sig Proc	;		
Algorithms	*		
Contract Award for Area Common User			
System (ACUS) Interfaces for TROJAN	: 1		
Intel Network	×		
Contract Award for Multi-bandwidth			
compression algorithms	×		
Contract Award for dissemination		>	
applications		<	
Contract Award 10f I fanscription Europionality at the DSOC		×	
Functionality at the INOCS			
Prototyne insertion-video	×		
omiragion/nrocessing			
Spec software for signal processing			
algorithms	×		
Enhanced signal processing algorithms	×		
Area Common User System (ACUS)			
interface for TROJAN Intel Net		×	
Multi-bandwidth compression algorithms		×	
Dissemination applications			×
Transcription functionality at RSOCs			×
*Denotes a completed effort			
Project DL16	Page 16 of 28 Pages	Exhibit R-2 (PE 0604270A)	70A)
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RDT8	RE PROG	RDT&E PROGRAM ELEMENT/P	EMENT/PR	ROJECT COST BREAKDOWN (R-3)	SOST BF	REAKDO	WN (R-	3	DATE F6	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	and Manu	facturing D	evelopment		PE NUMBER AND TITLE 0604270A Elect	AND TITLE A Electro	onic Warf	отпы Electronic Warfare (EW) Development	evelopm		PROJECT DL16
A. Project Cost Breakdown Hardware Development Software Development SBIR/STTR Total	kdown nt t			FY 1996 312 205 517	EX 1997 753 477 31 1261	1 <u>997</u> 753 477 31	FY 1998 760 518 1278	FY 1999 792 541 1333			
B. Budget Acquisition History and Planning Information	n History and	l Planning Info	ormation								
Performing Organizations Contractor or Contract Government Method/Type Award of Performing or Funding Obligati Activity Vehicle Date Product Development Organizations: None Sunnort and Management Organizations:	ations Contract Method/Type or Funding Vehicle It Organizatio	Award or Obligation <u>Date</u> ns: None	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 199 <u>6</u>	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Misc.	C/CPFF MIPR MIPR MIPR	Mar 96 Jan 97 Jan 98 Jan 99	517 1261 1278 1333	517 1261 1278 1333	0	517	1230	1278	1333		4358
SBIR/STTR Test and Evaluation Organizations: None	Organizations ed Pronerty:	s: None					31				31
Subtotal Product Development Subtotal Support and Management	lopment					517	1261	1278	1333		4389
Subtotal Test and Evaluation Total Project	luation					517	1261	1278	1333		4389
Project DL16				Page	Page 17 of 28 Pages	sa		Exh	Exhibit R-3 (PE 0604270A)	0604270A)	
					682						Item 67



RDT&E BUDGET ITEM JUS	EM JUS	TIFICA.	TION S	неет (в	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NI	PE NUMBER AND TITLE 0604270A Elect	e number and Title 0604270A Electronic Warfare (EW) Development	: Warfare	(EW) De	velopme		РRОЈЕСТ DL18
COST (in Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DL18 SHORTSTOP Development	0890	9151	0	0	0	0	0	0	0	24475

Reaction Program (QRP) to a CENTCOM Statement of Need (SON) developed in the early part of Operation Desert Shield/Desert Storm. Thirty six Limited Procurement currently deployed in Bosnia in support of Operation Joint Endeavor. The SHORTSTOP Operational Requirements Document, approved Apr 94, calls for a system with a lightweight autonomous configuration which shall be quickly and easily deployed via vehicles or manpack. In order to maximize tactical utility, it further requires that the munitions. There will be three configurations of the SHORTSTOP Electronic Protection System: a manpack system, a stand alone system, and a vehicle mounted system. Urgent units (AN/VLQ-9) were procured and fourteen have been upgraded to a multi-band configuration (AN/VLQ-10). Sixteen AN/VLQ-9s and ten AN/VLQ-10s are A. Mission Description and Budget Item Justification SHORTSTOP development is the continuation of the SHORTSTOP program which was initiated as a Quick provide a lightweight, fully integrated Radio Frequency Countermeasure system to provide protection for personnel and other high value assets against proximity fuzed set be capable of operation from either a battery or suitable external power source. The current EMD program for the SHORTSTOP Electronic Protection System will SHORTSTOP will be used by Infantry, Engineering, Armored, Field Artillery, and Intelligence units to enhance survivability.

Acquisition Strategy: A contract was awarded in July 1994 on a competitive basis for the development of a lightweight autonomous configuration of the SHORTSTOP Electronic Protection System.

FY 1996 Accomplishments:

- Completed hardware design 4369
- Completed software design and began integration with hardware 1336
 - Began fabrication of nine (9) prototypes 1095
 - 0089 Total

FY 1997 Planned Program:

- Complete fabrication/contractor qualification testing of nine (9) prototypes
- Award T&M contract for support of Government Technical and Operation Test
 - Design/fabricate Fuze Immulator to support testing
- Design/develop 1553 instrumentation data interface to support live fire test
 - - Develop installation kit for vehicle mount version Conduct technical and operational test 1380 95
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) 224

Project DL18

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Exhibit R-2 (PE 0604270A)

RDT&E BUDGET ITEM JUST		CATIC	N SHE	ET (R	FICATION SHEET (R-2 Exhibit)	oit)		DATE Febr	February 1997	7
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopment		PE NUM 0604	PE NUMBER AND TITLE 0604270A Elect	пге lectronic	Warfare	(EW) De	אוזודר (EW) Development (EW) Development		РРОЈЕСТ DL18
FY 1998 Planned Program: Project not funded in FY 98	86 A:									
FY 1999 Planned Program: Project not funded in FY 99	66 A									
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request		FY 1996 7488 7563 -763 6800	FY 1997 9348 9151 9151	1 <u>997</u> 9348 9151	FY 1998 0 0	FY 1999 0 0	ଷ ୦୦ ୦			
C. Other Program Funding Summary Other Procurement, Army SSN: VA8000 - SHORTSTOP	FY 1996 EN	FY 1997 E	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Compl 0	Total Cost 5000
D. Schedule Profile	FY 1996	4	FY 2	FY 1997	4	FY 1998	% £.	1 F	FY 1999 2 3	4
Complete hardware design Complete software design and begin integration with hardware Begin fabrication of nine (9) prototypes Complete fabrication of nine (9) prototypes Conduct contractor qualification testing Award T&M support contract Design/Fabricate Fuze Immulator Design/Gevelop 1553 instrumentation data interface Develop installation kits Deliver nine (9) EMD prototypes Conduct Technical Test Conduct Operational Test *Denotes completed milestone		* * *	X X X X X X X X X X X X X X X X X X X	X X X X X X S Bages	××			Exhibit R-2 (PE 0604270A)		
			684							Item 67



RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT C	OST BREAK	DOWN (R-3		DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development	LE ctronic Warfa	ıre (EW) De	evelopment	PROJECT DL18
A. Project Cost Breakdown Primary Hardware Development Test and Evaluation Government Engineering Support Program Management Support SBIR/STTR Total B. Budget Acquisition History and Planning Information: Not Applicable Project DL18	EY 1996 5626 735 439 6800 6licable	1996 FY 1997 5626 4962 2875 735 731 439 359 224 6800 9151 e	FY 1998	Exhibi	1999 Exhibit R-3 (PE 0604270A)	
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RDT&E BUDGET ITEM JUST	EM JUS	TIFICAL	TION SE	HEET (R	FIFICATION SHEET (R-2 Exhibit)	bit)		DAIE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE NI 060	PE NUMBER AND TITLE 0604270A Elect	e NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development	Warfare	(EW) De	velopme		РRОЈЕСТ D665
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D665 Aircraft Survivability Equipment Development	38743	43645	46870	37248	6144	4684	8129	14091	14091 Continuing Continuing	Continuing

development include new or upgraded systems to counter monopulse, millimeter wave, frequency agile, pulse doppler and continuous wave radars, passive infrared missile applications coordinated through DoD. This project also provides the technical base for electronic warfare equipment for Comanche and Special Operations Aircraft. The A. Mission Description and Justification: Aircraft Survivability Equipment Development provides for the development and system integration of Aircraft Survivability seekers and laser directed weapon systems. Continual adjustments are made to this program to meet the changing and evolutionary nature of technology and threat. This eliminating the ability of threat air defense systems to detect, hit, damage or destroy Army aircraft. Developments respond to the approved requirements documents, test attack/scout, and assault/cargo mission requirements. Equipment developed will increase combat effectiveness and potential for mission accomplishment by reducing or projects in this program element support research efforts that complete Demonstration/Validation (Dem/Val) prototype efforts and transition into the Engineering and and type classification for production and fielding of ASE systems to address infrared, radar, laser and optical/electro-optical directed air defense threats. Efforts in program has joint service applications that are coordinated through the Joint Technical Coordinating Group for Aircraft Survivability (JTCG/AS), as well as NATO Equipment (ASE) to achieve survivability, reduce vulnerability, and enhance combat effectiveness required to fulfill special electronic mission aircraft (SEMA) Manufacturing Development (EMD) phase of the acquisition strategy and are, therefore, correctly placed in Budget Activity 5.

Acquisition Strategy: Project is comprised of multiple programs which have been competitively awarded.

FY 1996 Accomplishments:

- Continued EMD of Suite of Integrated Infrared Countermeasure (SIIRCM). New nomenclature assigned formerly ATIRCM/CMWS.
 - Continued EMD of Advanced Infrared Countermeasure Munitions (AIRCMM) 3246
- Continued EMD of the AN/ALQ-211 Suite of Integrated Radio Frequency Countermeasures (SIRFC). New nomenclature assigned formerly ATRJ 5704
 - Continued development of Advanced Visual-Electro-Optical Signature Suppression and Analysis (AVESSA)
- Continued integration efforts of ASE systems
- Continued in-house and program management administration

FY 1997 Planned Program:

- Continue EMD of SIIRCM 19431
- Continue EMD of AIRCMM 2530
 - Continue EMD of SIRFC 6228
- Continue development of AVESSA

Project D665

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Exhibit R-2 (PE 0604270A)



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhib	t)	DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering	IDGET ACTIVITY - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270A Elect) тіт∟Е Electronic \	Narfare (EW	ЭТІТІЕ Electronic Warfare (EW) Development	PROJECT D665
FY 1997 Planned P 100 3226 Total 43645	 FY 1997 Planned Program: (continued) 100 Complete integration efforts of ASE systems 3226 Continue in-house and program management administration 991 Small Business Innovative Research/Small Business Technic Total 43645 	ns nt administration Business Technical Transfer (SBIR/STTR)	R/STTR)			
FY 1998 Planned Program:	rogram: Continue EMD of SIIRCM Continue EMD of the AIRCMM Continue EMD of SIRFC Continue development of AVESSA Continue in-house and program management administration	и				
FY 1999 Planned Program:	rogram: Continue EMD of SIIRCM Complete EMD of the AIRCMM Complete EMD of the SIRFC Complete development of AVESSA Continue in-house and program management administration	и				
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	Summary FY 1996 Budget 38828 39219 opriated Value -476 equest 38743	F <u>Y 1997</u> 38579 43645 43645	FX 1998 34606 46870	FY 1999 34542 37248		
Change Summary Ex	Change Summary Explanation: Funding: +12264 of ASE APA, BA4 AZ3504 w RDT&E in FY99.	vas converted to RL)T&E in FY98;	+2706 of ASE A	BA4 AZ3504 was converted to RDT&E in FY98; +2706 of ASE APA, BA4 AZ3504 was converted to	nverted to
Project D665	Pa	Page 22 of 28 Pages			Exhibit R-2 (PE 0604270A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	E	TSUL ME	TFICAT	HS NOI	EET (R	-2 Exhib	oit)		DATE Feb	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ng D	evelopme	nt	PE NU 000	PE NUMBER AND TITLE 0604270A Elect	TTLE lectronic	Warfare	(EW) De	דודנה Electronic Warfare (EW) Development		РРОЈЕСТ D665
C. Other Program Funding Summary		FV 1996	FV 1997	FV 1998	FV 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
APA, BA 4 AZ3504 ASE APA, BA 2 AA0720 ASE Modifications		50109 12915	436	905	34412	46203 11982	41601	100667	104090 15351	Cont	Cont
D. Schedule Profile	-	FY 1996	4	- F	FY 1997	4	FY 1998	8 k 4	- F.	FY 1999	4
Continue EMD of SIIRCM Continue EMD of AIRCMM Continue EMD of SIRFC Continue EMD of SIIRCM Continue EMD of SIIRCM Continue EMD of AIRCMM Continue EMD of AIRCMM Continue EMD of SIIRCM Continue EMD of SIIRCM Continue EMD of SIIRCM Continue EMD of SIIRCM Complete EMD of SIIRCM	-×××		•	Dans X X X X X X X X X X X X X X X X X X X	» Drace	××××			X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	-
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RDT&	E PROG	RDT&E PROGRAM ELEMENT		PROJECT (COST BREAKDOWN (R-3)	REAKDO	WN (R-	3)	DATE Fe	February 1997	7
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	nd Manu	facturing D	evelopment		PE NUMBER AND TITLE 0604270A Elec	AND TITLE A Electro	onic Warf	are (EW) [ਹ ਸਾ⊓E Electronic Warfare (EW) Development		РRОЈЕСТ D665
A. Project Cost Breakdown R&D Contracts	down			FY 1996 32091	FY 1997 33534	<u>7 1997</u> 33534	FY 1998 31209	FY 1999 18156	6 1.5		
Test and Evaluation	9			432		1724	8557	11536	٠		
Government Engineering Support Program Management Engineering		Support		5043		6272	,04 6400	7007			
SBIR/STTR Total	:			38743		991 43645	46870	37248	~~		
B. Budget Acquisition History and Planning Information: Performing Organizations	History and ions	Planning Info	rmation:								
Contractor or Co Government M	Contract Method/Type	Award or Obligation	Performing Activity	Project Office	Total Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
velopmen	t Organizatio C/CPIF	ns: Note: Misce Sep 95	allaneous includes t 6740	unding to varid	ous activities (2 1000	2300 zt. Lo	ours, MO/CEC 1710	OM, Fort Mon 1070	mouth, NJ) for 660	ASE programs 0	6740
(AIRCMM) ITT Corp (SIRFC) C/	C/CPAF	Jul 94	55756	55756	19450	15018	14700	5337	1140	111	55756
rs(ATIRCM)	C/CPAF	Sep 95	57910	57910	2282	12414	10981	19879	12218	136	57910
Misc. Co	Contracts MIPR				6980 1099	2359	6143 1124	4923 704	4138 549	Cont	Cont
age	ient Organiz	cations: Note:	Miscellaneous incl	udes funding to	various activi	ties (ATCOM,	St. Louis, MC)/CECOM, Fort	t Monmouth, N.	J) for ASE progr	ams
Support Contracts C/ Misc. M	C/FFP MIPR	Nov 94			362 6522	243 4498	5632	5885	515 6492	Cont	Cont
ınd Evaluation	Organizations	: Note: Miscell	aneous includes fur	nding to variou	s activities for	ASE programs	. 1411	1525	250	Cont	tuo.
TECOM M	MIPR					70	1111	3069	8446	0	11515
	MIPR						313	3963	2836		7112
SBIR/STTR							991			0	991
Government Furnished Property: None	d Property:	None									
Project D665				Page	Page 24 of 28 Pages	es		Exh	Exhibit R-3 (PE 0604270A)	0604270A)	
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BF	REAKDO	WN (R-	3	DATE Fe	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270A Elect	AND TITLE A Electro	onic Warfa	ЭТІТІЕ Electronic Warfare (EW) Development	Developm		PROJECT D665
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation SBIR/STIR Total Project	Total Prior to <u>FY1996</u> 30811 7084 853 38748	EY 1996 33268 5043 432 38743	EY 1997 34658 6272 1724 991 43645	EY 1998 31913 6400 8557 46870	FY 1999 18705 7007 11536 37248	Budget to Complete Cont Cont Cont Cont Cont	Total Program Cont Cont 991 Cont
Project D665	Page 25 of 28 Pages	šes		Exh	Exhibit R-3 (PE 0604270A)	0604270A)	
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RDT&E BUDGET ITEM JUST	EM JUS		TION SI	HEET (R	IFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	lent	PE NI 060	PE NUMBER AND TITLE 0604270A Elect	e NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development	: Warfare	(EW) De	velopme		PROJECT D2VT
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D2VT Suite of Integrated Infrared Countermeasures Operational Test (SIIRCM)	0	0	166	2358	116	0	0	0	0	2640

operational requirements for a modular IRCM system capable of providing awareness and self protection jamming countermeasures. The system is applicable to the AH-64, A. Mission Description and Justification: This project supports the operational test for the Suite of Integrated Infrared Countermeasures (SIIRCM) and is new start in MH-47E, MH-60K, RC-12K, EH-60, UH-60, and CH-47D aircraft. The program has been designated a Tri-Service program, with application to the Air Force and Navy FY 1998. This project will provide active and passive Infrared Countermeasure (IRCM) protection against infrared guided weapons. The system is designed to meet aircraft.

Acquisition Strategy: Not applicable

FY 1996 Accomplishments: Project not funded in FY 96

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program:

Commence SIIRCM Operational Test Support Total

FY 1999 Planned Program:

Continue SIIRCM Operational Test Support 2358 2358

Total

FY 1997 FY 1996 B. Project Change Summary

Adjustments to Appropriated Value FY 1997 President's Budget FY 1998 Pres Bud Request Appropriated Value

Change Summary Explanation: Funding: Project initiated in FY 1998 to support SIIRCM operational test. (FY 98 +166; FY99 +2358)

Project D2VT

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2358

166

FY 1999

FY 1998

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	FION SH	IEET (R	-2 Exhit	oit)		DATE Febr	February 1997	[2
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development)evelopme	ent	PE NU 0 00	PE NUMBER AND TITLE 0604270A Elect	пге lectronic	Warfare	(EW) De	отп∟Е Electronic Warfare (EW) Development		PROJECT D2VT
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY~2002	FY 2003	To	Total
APA, BA 4 AZ3507 ASE (ATIRCM) APA, BA 2 AA0720 ASE Modifications* (ATIRCM)		9167		10634	18064	13649 13657	645 <i>57</i> 14835	67842 15351	Cont	Cont
*Represents only part of the funding in this SSN.										
D. Schedule Profile	FY 1996		E (Y 199	-	۲ 199		Įr. (FY 1999	-
Initiate SIIRCM Test Support Continue SIIRCM Test Support		1	7	n	1	√ ×	ე ქ	~ ×		4
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	·									
Project D2VT			Page 27 of 28 Pages	28 Pages			Exhibi	Exhibit R-2 (PE 0604270A)	04270A)	
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RDT&E PROGRAM ELEMENT/PRO.	JECT C	PROJECT COST BREAKDOWN (R-3)	AKDO	WN (R-	(2)	DATE F (February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604270A Elect	D TITLE Electro	nic Warf	ס חדונה Electronic Warfare (EW) Development	evelopm	lent	PROJECT D2VT
A. <u>Project Cost Breakdown</u> Test and Evaluation Total	FY 1996	FY 1997	Z	FY 1998 166 166	FY 1999 2358 2358			
B. Budget Acquisition History and Planning Information								
	Project Office	Total Prior to					Budget to	Total
Vehicle Date EAC svelopment Organizations: None	EAC	FY 1996 F	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Test and Evaluation Organizations:					166	2358	116	2640
Government Furnished Property: None						·		
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project					166 166	2358 2358	116 116	2640 2640
,								
Project D2VT	Page.	Page 28 of 28 Pages			Exhi	bit R-3 (PE	Exhibit R-3 (PE 0604270A)	
								,

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA.	TION S	JEET (R	IFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme)evelopm	ent	PE NI 000	PE NUMBER AND TITLE 0604321A AII S	TITLE VII Source	e number and title 0604321A All Source Analysis System (TIARA)	s Systen	ı (TIARA	(
COST (in Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	49912	39308	24045	26228	22695	31632	30880	30118	Continuing Continuing	Continuing
DB19 ASAS Evolutionary Acquisition	48496	35660	21598	23813	22695	31632	30880	30118	30118 Continuing Continuing	Continuing
D2FT ASAS Operational Test	1416	3648	2447	2415	0	0	0	0	0 Continuing Continuing	Continuing

Mission Description and Budget Item Justification: This program element funds the development of the All Source Analysis System (ASAS) Evolutionary Acquisition development in battalions, brigades, armored cavalry regiments (ACR), separate brigades, divisions, corps, and echelons above corps (EAC). The projects in this program element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and therefore are correctly placed in Budget Activity (EA) system and its operational testing. ASAS is the automated support system for the intelligence and electronic warfare (IEW) functional area of the Army Battle Command System (ABCS). It is a tactically deployable Automated Data Processing (ADP) system designed to support management of IEW operations and target

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Exhibit R-2 (PE 0604321A)





RDT&E BUDGET ITEM JUS	EM JUS	TIFICAT	TION S	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	evelopm	ent	PE NI 060	PE NUMBER AND TITLE 0604321A All S	TITLE	e Analysi	s Systen	E NUMBER AND TITLE 3604321A All Source Analysis System (TIARA)		Р ROJECT DB19
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DB19 ASAS Evolutionary Acquisition	48496	35660	21598	23813	22695	31632	30880	30118	30118 Continuing Continuing	Continuing

A. Mission Description and Justification: Project DB19 - ASAS Evolutionary Acquisition: This project funds the development of the Army's only tactical intelligence intelligence processing system. The ASAS system provides automated support to the combat commander in the areas of intelligence and collection management, all-source target and situation analysis, single- and multi-source processing, intelligence reporting, electronic warfare, and operational security as well as automation support to the fusion project, the ASAS Block II Evolutionary Acquisition, within the Intelligence Fusion Project Office. The successful execution of military operations requires a comprehensive understanding of enemy force deployments, capabilities, and potential courses of action. The ASAS is a ground based, mobile, command and control, flexible and modular intelligence and targeting system that will provide tactical commanders a common view of the battlefield and a means for gaining a timely and battlefield commander's command and control.

control functionality, jump and degraded mode operations, enhanced communications, and improved reliability and supportability. ASAS Block II strategy maximizes the Acquisition Strategy: The ASAS Block II development program will build upon and expand the capabilities and functionalities developed and produced in the ASAS Block I System including conversion to the Army Tactical Command and Control System (ATCCS) Common Hardware/Software Open architecture and the OSD directed Common Operating Environment (COE) and Modernized Integrated Database (MIDB). Additional software capabilities include enhanced intelligence and command and opportunities. This strategy provides early user capabilities and streamlines acquisition. Building upon experience and feedback gained from the fielded ASAS and other use of Government Furnished Equipment (GFE), government and commercial Non-Developmental Item (NDI) software, reuse of proven Office of Secretary of Defense (OSD) and ATCCS Command, Control, Communications and Intelligence (C31) software, multiple prototype deliveries and continuous user test and evaluation tactical fusion prototypes, ASAS Block II will undergo Army Systems Acquisition Review Council (ASARC) Milestone III review in FY 99.

brigades) by FY99. This ASAS-Extended program accomplishes this through: reuse of proven Block I software; leveraging the traditional acquisition successes of Block I; use of relatively low cost NDI equipment; and tailoring the existing training and maintenance support structure. The Army's intent is to keep fielded ASAS technology as capability packages and inserting them into the fielded ASAS. These capability packages will be used with all of the fielded ASAS systems and modules. ASAS Block II will be fielded to Army active and reserve armored cavalry regiments, separate brigades, divisions, corps, and echelons-above corps. Brigades and Battalions will receive In March 1994, the Army was directed to accelerate fielding the ASAS capability across the force (including all Military Intelligence reserve units and National Guard current as possible by initiating value engineering and technology insertion to the fielded ASAS, and by packaging some of the ASAS Block II software drops into Collateral Remote Workstations.

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1997	766
BUDGET ACTIVITY 5 - Engineering	BUDGET ACTIVITY 5 - Engineering and Manufacturing Development (TIARA)		РРОЈЕСТ DB19
FY 1996 Accomplishments:	hments: Continued ASAS Block II Evolutionary E&MD Capability Packages -Developed and integrated ASAS Common Applications -Developed and integrated Joint Collection Management Tools -Incorporated DOD directed Common Operating Environment (COE) -Add MIDB Capability -Developed Remote Workstation-Collateral for Task Force XXI Conducted Development/Operational/Assessment Testing Procured and provided GFE for Product Development & Test		.
FY 1997 Planned Program: • 31253 Continu	rogram: Continue ASAS Block II Evolutionary Acquisition E&MD Capability Packages -Implement COE-Compliant System Services and Common Applications -Complete Unified Database Schema		
3572 835 Total 35660	-Rehost and improve All Source intelligence functionality from Blk I to Blk II -Enhance RWS to meet evolving DIV XXI capabilities Conduct Development/Operational/Assessment Testing Small Business Innovation Research/Small Business Technical Transfer (SBIR/STTR)		
FY 1998 Planned Program: • 19213 Continu	¥	·	
2385 Total 21598	 Integrate and Test CP4 (enhanced comms functionality; jump/degraded mode ops) Rehost and improve All Source intelligence functionality from Blk I to Blk II Enhance RWS to meet evolving EXFOR XXI capabilities Conduct Development/Operational/Assessment Testing 		
Project DB19	Page 3 of 9 Pages	Exhibit R-2 (PE 0604321A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUST	TFICATI	ON SH	EET (R	-2 Exhit	oit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopme	nt	PE NUN 0604	PE NUMBER AND TITLE 0604321A AII S	II Source	Analysis	s Systen	ЭТІТІЕ All Source Analysis System (TIARA)	ā O	PROJECT DB19
FY 1999 Planned Program: - 21378 Continue ASAS Block II Evolutionary Acquisition E&MD Capability Packages -Integrate and Test CP4 (enhanced comms functionality; jump/degraded mode ops) -Rehost and improve All Source intel functionality from Blk I to Blk II -Enhance RWS to meet evolving EXFOR XXI capabilities -Level 5/6 COE migration and hardening -Develop objective target analysis capability -Interface initial CI/HUMINT capability into ACE -Block II Operational Test -CP4 Material Release -Block II Milestone III and Block III Milestone II Total 23813	lutionary Acquer (enhanced P4 (enhanced All Source in eet evolving Eration and hardarget analysis (HUMINT capa including: 1 Test se	uisition E&M comms funct tel functional XFOR XXI of lening apability bility into AC	ID Capabili tionality; ju lity from Bl :apabilities :E	ty Packages mp/degrade k I to Blk II	d mode ops)					
B. Project Change Summary FY1997 President's Budget		FY 1996 49716 50218	EX 1997 32433	<u>Y 1997</u> 32433 35660	<u>FY 1998</u> 21666	FY 1999 23918	61 &			
Adjustments to Appropriated Value FY1998 Pres Bud Request		-1722 -1722 48496	35	35660	21598	23813	8			****
C. Other Program Funding Summary OPA (K28801) ASAS Modules Spares (BS9704)	FX 1996 10277 1982	FY 1997 12282 0	F <u>Y 1998</u> 7772 0	<u>FY 1999</u> 25256 0	FY 2000 57216 1868	FY 2001 65847 5561	FY 2002 59056 8893	FY 2003 49482 10207	To Compl Cont Cont	Total Cost Cont Cont
D. Schedule Profile D. Schedule Profile I Phase 2 (Remote Workstation	FY 1996 2 3 X*	4 ×	FY 1 2 X* X	FY 1997 2 3 X X	4	FY 1998 2 3	8 8 4	1 2	FY 1999 2 3	4
Functionality) Prototype Delivery ASAS-Extended Unit Sets Block II Unit Sets	4	.		: ×	×	×	×	×	*	×
*Initial software drop delivered			0 300 7 000	December				о П	, CC	
Project UB19			rage 4 of 9 rages	rages				EXFIIDIT R-Z (PE U0U43Z IA)	04321A)	\ \ \ \
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RDT&E PROGRAM ELEMENT/PRO	JECT C	OST BR	EAKDC	ROJECT COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	260
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604321A AII S	AND TITLE	PE NUMBER AND TITLE 0604321A All Source Analysis		System (TIARA)		PROJECT DB19
A. Project Cost Breakdown Systems Development Contractor Engineering Government In House Support Test SBIR/STTR Total	EY 1996 39405 2502 3717 2872 48496	FY 1997 30825 2100 1900 0 835 35660	7.1997 30825 2100 1900 0 835 35660	FY 1998 17640 1600 1600 758 21598	FY 1999 19077 2000 1900 836			
B. Budget Acquisition History and Planning Information: Following for Block II ASAS. Performing Organizations Contractor or Contract Government Method/Type Award or Performing Project Total Performing Obligation Activity Office Prior to Prior to Prior to Activity Activity Vehicle Date EAC FY 1996 Product Development Organizations Lockheed Martin CPAF Oct 93 113600 41289	ng for Block Project Office EAC	Total Prior to FY 1996 41289	FY 1996 26748	FY 1997 23025	FY 1998	FY 1999 10739	Budget to Complete Cont	Total Program 113043
Tobyhanna Depot MIPR Contractor Eng Systems Eng SBIR/STTR			4075 5347 1300 835	2835 4750 1050	1000 4239 800	2200 4541 1200	Cont Cont	10110 18877 4350 835
Support and Management Organizations Contractor Spt Gov't In House Test and Evaluation Organizations: None			2502 3717	2100	1600	1900	Cont	8202 9117
Project DB19	Page	Page 5 of 9 Pages 698	S		Exh	Exhibit R-3 (PE 0604321A)	0604321A)	Item 68



RDT&E PROGRAM ELEMENT/PROJECT	JECT COST BREAKDOWN (R-3)	REAKDO	WN (R-	<u></u>	DATE F	February 1997	397
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604321A AII S	AND TITLE A AII SOI	D ТІТІЕ All Source Analysis System (TIARA)	ysis Syst	em (TIAR		PROJECT DB19
Government Furnished Property Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Property CHS II MIPR Support and Management Property: None Test and Evaluation Property	1587	1100	0	359	397	0 (3443
Test sets CHS II Subtotal Product Development	0 42876	39405	31660	17640	19077	>	150658
Subtotal Support and Management Subtotal Test and Evaluation Total Project	42876	6219 2872 48496	4000	3200 758 21598	3900 836 23813		172443
Project DB19	Page 6 of 9 Pages	es		EX	Exhibit R-3 (PE 0604321A)	0604321A)	
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RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SI	HEET (R	FIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	DE NI	PE NUMBER AND TITLE 0604321A All S	TITLE VII Source	e Analysi	s Systen	E NUMBER AND TITLE 0604321A All Source Analysis System (TIARA)		PROJECT D2FT
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D2FT ASAS Operational Test	1416	3648	2447	2415	0	0	0	0	0 Continuing Continuing	Continuing

encountered in actual combat with typical user troops trained to employ the system. As necessary, OPTEC provides Army leadership with an evaluation of effectiveness and evaluation of the ASAS by the Operational Test and Evaluation Command (OPTEC). ASAS is an Acquisition Category (ACAT) I system with several dedicated iterations A. Mission Description and Justification: Project D2FT - ASAS Test and Evaluation: This project finances the direct costs of planning and conducting testing and of Test and Evaluation (Technical and Operational) between FY 95 and FY 99. Testing and evaluations are conducted under conditions, as close as possible, to those suitability of the system. Project D2FT is restructured from PE 0605712A. TECOM provides the Army leadership with testing of the ASAS, and is not a new start.

Acquisition Strategy: Not applicable, see B19 above.

FY 1996 Accomplishments:

1416 Conducted ASAS Block II Technical and Operational Testing and Evaluation

1416 Total

FY 1997 Planned Program:

3559 Conduct ASAS Block II Technical and Operational Testing and Evaluation
 89 Small Business Innovation Research/Small Business Technical Transfer (SE

Small Business Innovation Research/Small Business Technical Transfer (SBIR/STTR)

3648 Total

FY 1998 Planned Program:

2447 ACE Characterization Test and Evaluation

2447 Total

FY 1999 Planned Program:

2415 Phase IV PPQT 2415

Total

Project D2FT

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Exhibit R-2 (PE 0604321A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhib	it)	DATE Februa	February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604321A AII S	ЭТІТLЕ All Source	PE NUMBER AND TITLE 0604321A All Source Analysis System (TIARA)	tem (TIARA)	PROJECT D2FT
<u>FY 1</u> 1	F <u>Y 1997</u> 3767 3648	FY 1998 2515	FY 1999 2514		
Adjustments to Appropriated Value -51 FY1998 Pres Bud Request 1416	3648	2447	2415		
C. Other Program Funding Summary: Not Applicable					
D. Schedule Profile FY 1996	FY 1997	4	FY 1998	FY 1999	999 3 4
Source te Workstation 18	× ·	× ×		× ×	
Project D2FT	Page 8 of 9 Pages	:	Δ I	Exhibit R-2 (PE 0604321A)	21A) Itom 68
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JGRAM EL	EMENT/PRC	JECT C	SOST BI	REAKDO	WN (R-	3)	DATE Fe	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	nufacturing	Development		PE NUMBER AND TITLE 0604321A All S	AND TITLE	PE NUMBER AND TITLE 0604321A All Source Analysis	ysis Syste	System (TIARA)		PROJECT D2FT
A. <u>Project Cost Breakdown</u> Operational Test, Evaluation, Assessment SBIR/STTR Total	ssessment		FY 1996 1416 1416	EX	FY 1997 3559 89 3648	<u>FY 1998</u> 2447 2447	FY 1999 2415 2415	61.6		
B. Budget Acquisition History and Planning Information	and Planning In	<u>formation</u>								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing or Funding Obligation Activity Vehicle Date Product Development Organizations: None Support and Management Organizations: None	pe Award or Obligation <u>Date</u> ations: None	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Test and Evaluation Organizations OPTEC SBIR/STTR	ions				1416	3559 89	2447	2415	Cont	9837
Government Furnished Property: None	ty: None									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	tt				1416 1416	3648 3648	2447 2447	2415 2415		9926
Project D2FT			Pag	Page 9 of 9 Pages	es		Exh	Exhibit R-3 (PE 0604321A)	0604321A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FM JUS	TIFICA.	TION S	HEET (R	R-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Jevelopm	ient	PE NI 060	PE NUMBER AND TITLE 0604325A FOIIO	E NUMBER AND TITLE 3604325A FOIIOW-On TO TOW	To TOW				PROJECT DE18
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DE18 Follow-On to TOW	944	5479	13949	50884	71935	63147	73127	72503	72503 Continuing Continuing	Continuing

will perform under day/night adverse weather conditions and obscurants. The FOTT will be countermeasures hardened and will increase crew survivability. Projects within A. Mission Description and Budget Item Justification: Provides for Engineering and Manufacturing Development for Follow-On To TOW (FOTT), a vehicle mounted, Sub-System (IBAS) platforms. The FOTT will be capable of operating out to the maximum range required in the FOTT Operational Requirements Document (ORD) and Purpose Wheeled Vehicle (HMMWV) with Improved Target Acquisition System (ITAS) and on the Bradley Fighting Vehicle (BFV) with Improved Bradley Acquisition crew served Heavy Anti-Tank Missile System which will replace/supplement the TOW missile family. It will be integrated onto and fired from the High Mobility Multithis element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in budget activity 5.

Acquisition Strategy: The FOTT program will provide a systems approach by leveraging existing missile technologies. This next-generation missile will be compatible with both current and emerging TOW missile platforms. The EMD contract will be competitively awarded. EMD activities will include both missile design and platform integration.

FY 1996 Accomplishments:

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	d Techn	
	tem and	
	ted Sys	
	Conduc	
	al; and	
	Propos	
	est for	
	aft Requ	
	red Dr	
	n; Prepa	
	nentation	
	Docum	
	stone II	
	am Mile	
	d Progra	
	Initiate	
	ration:	
	D Prepa	Analysis.
	944 EMD Preparation: Initiated Progr	Ana
1	94	
	_	

Total 944

FY 1997 Planned Program:

- Continue EMD Preparation: Develop Milestone II Documentation, System Specification and Final Request for Proposal.
- Support Contractor Pre-EMD Risk Reduction Tests: Provide Range Support, Range Instrumentation Suite, Range Facility Support, Range Target 4300
 - Sets, Range Test Management, Execution and Data Reduction, TOW Platform Shipment, Integration and Refurbishment.
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 5479

FY 1998 Planned Program:

Total

- Release EMD RFP; Conduct Source Selection; Complete Milestone II, and Award EMD Contract. 1696
- Pre-CDR Component Hardware Analysis and Procurement of Component Hardware to Support Pre-CDR Tests. 1097
 - Initiate Component Design and System Engineering Analysis for Preliminary Design Review.

Project DE18

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Page 1 of 3 Pages

Exhibit R-2 (PE 0604325A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUST	LIFICAT	ION SH	EET (R-	2 Exhib	it)		DATE Febr	February 1997	7
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Developme	ent .	PE NUN 0604	PE NUMBER AND TITLE 0604325A Follo	TITLE Follow-On To TOW	To TOW			PR.	PROJECT DE18
 FY 1998 Planned Program: (continued) 598 Prepare for Early User Assessment. 873 Procure Open System Integration and Simulation Laboratory (SIL) Hardware and Software. Total 13949 	ssment. ration and Simu	lation Labor	atory (SIL)	Hardware ar	id Software.					
 FY 1999 Planned Program: 1493 Conduct Early User Assessment and Post Assessment Analysis to support PDR. 12764 Conduct Component Design and System Engineering Analysis for PDR; Conduct PDR. 18138 Initiate Procurement of Hardware for Pre-Production Test. 5910 Conduct Pre-CDR Tests and Update FOTT Systems Simulations associated with HMM and SIL. 12579 Continue System Engineering Analysis for Critical Design Review. 	ment and Post / n and System Er rdware for Pre-I 1 Update FOTT	Assessment / ngineering A Production T [Systems Sin Critical Desi	Analysis to s nalysis for F est. mulations as ign Review.	upport PDR. PDR; Condut sociated with	t PDR. 1 HMMWV	and BFVS \	/irtual Proto	ssessment Analysis to support PDR. roduct PDR. roduction Test. Systems Simulations associated with HMMWV and BFVS Virtual Prototypes, Hardware-in-the-Loop, Critical Design Review.	are-in-the-L	,doo
)							
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 968 995	FY	F <u>Y 1997</u> 5596 5479	FY 1998 15397	FY 1999 49387	<u>20</u>			
Adjustments to Appropriated Value FY 1998 Pres Bud Request Change Summary Explanation: FY1998/FY1999 Funding Adjustments (FY 98 -1448/FY 99 +1497) for higher priority requirements.	9 Funding Adju	-51 944 stments (FY	98 -1448/F	5479 Y 99 +1497)	13949 for higher pt	50884 riority requirer	34 rements.			
C. Other Program Funding Summary.	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Compl	Total Cost
Missile Procurement, Army TOW 2 C59300 FOTT H04500	9896	13571	1326	0	0	0	0	0 34092	20854	2280829 54946
D. <u>Schedule Profile</u>	FY 1996 2 3	4	F. 2	FY 1997 2 3	4	FY 1998 2 3	3 4	1 2	FY 1999 2 3	4
Release RFP Complete Source Selection Award EMD Contract Preliminary Design Review					×		××		×	
Project DE18			Page 2 of 3 Pages	3 Pages			Exhib	Exhibit R-2 (PE 0604325A)	304325A)	
			704							Item 69





RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT C	OST BE	REAKDO	WN (R-	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604325A Folice	AND TITLE A Follow	PE NUMBER AND TITLE 0604325A FOIlow-On To TOW	ΜO		<u>a</u> 0	Р ROJECT DE18
A. Project Cost Breakdown Primary Hardware Development Program Management Support Developmental Test and Evaluation SBIR/STTR	FY 1996 894 50 944	FY 1997 1045 4300 134 5479	1997 1045 4300 134 5479	FY 1998 11655 1696 598 13949	FY 1999 45413 1986 3485 50884			
B. Budget Acquisition History and Planning Information								
Award or Performing Obligation Activity <u>Date</u> <u>EAC</u>	Project Office <u>EAC</u> F	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Product Development Organizations Prime TBD TBD TBD	TBD				11655	45413	Cont'd	27068
Support and Management Organizations PM CCAWS, PO			279	400	471	523		1673
RSA, AL MICOM, RSA, AL PO Miscellaneous PO			605	672 73	953 272	1072 391		3302 746
Test and Evaluation Organizations TECOM, APG, PO			20	4200	865	3485		8333
MD SBIR/STTR				134				134
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			894 50 944	1145 4334 5479	11655 1696 598 13949	45413 1986 3485 50884		57068 5721 8467 71256
Project DE18	Page	Page 3 of 3 Pages	SS		Exh	Exhibit R-3 (PE 0604325A)	0604325A)	
		705						Item 69

RDT&E BUDGET ITEM JUS	EM JUS	TIFICA'	TION SI	TIFICATION SHEET (R-2 Exhibit)	१-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NI 060	PE NUMBER AND TITLE 0604604A Medi	TITLE Medium 1	E NUMBER AND TITLE 0604604A Medium Tactical Vehicles	ehicles		ă O	PROJECT DH07
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DH07 Family of Medium Tactical Vehicles (FMTV)	2923	5874	3729	0	0	1613	0	0	0 Continuing Continuing	Continuing

five year multi-year contract due to budget constraints. Bringing these vehicles on line as soon as possible supports the pure fleeting of FMTV to reduce the logistics impact FY 1996, FY 1997 and FY 1998, Project DH07 funds the Army's portion of the Medium Tactical Truck Remanufacture Program (MTTR). This research and development through FY99 harmonizes the Army effort with the U.S. Marine Corps Medium Tactical Vehicle Remanufacture (MTVR) program as directed by Congress. This Program Van, Light Medium Tactical Vehicle (LMTV) Trailer and MTV Trailer]. FMTV is required to fill 2 1/2 (LMTV) and 5 ton truck (MTV) requirements, resolve operational FMTV will also provide a follow-on to the current M939/A2 Series 5 ton truck. Body styles currently under development under Project DH07 were deferred from the first Element supports research efforts in the engineering and manufacturing development phases of the acquisition strategy and is therefore correctly placed in Budget Activity deficiencies and operate throughout the theater as multi-purpose transportation vehicles used by combat, combat support and combat service support units. This system is designed to be rapidly deployable worldwide and operate on primary and secondary roads, trails, and cross-country terrain. Vehicles operate in all climatic conditions. In A. Mission Description and Budget Item Justification: This program element (PE) supports modernization of the Army's medium truck fleet. The Family of Medium and operating and support costs. This project supports the development of the FMTV Special Body Variants [Medium Tactical Vehicle (MTV) Tanker, MTV Expansible Tactical Vehicles (FMTV) will replace aging M44 Series 2 1/2 ton trucks, M39 and M809 Series 5 ton trucks which are beyond their average useful life of 20-22 years. effort is a prelude to embarking on a major remanufacture program to increase the mobility, maintainability and reliability of the existing 5 ton fleet. Funding in FY97

production contract due to budget constraints. This Technical Data Package will be combined with the Technical Data Package obtained from the first contract to enable all models to be produced under the second FMTV production contract. The acquisition strategy for the Medium Tactical Truck Remanufacture Program (MTTR) is to award Acquisition Strategy: The acquisition strategy is to obtain a Level III Technical Data Package for the FMTV Special Body Variants that were omitted from the first two prototype contracts, which will lead to production.

FY 1996 Accomplishments:

- FMTV Technical Data Package
 - Prototype Contracts (MTTR)
- Source Selection Evaluation Board (SSEB) (MTTR)
- Technical Support Contract (MTTR)
- Government Engineering (MTTR)

Project DH07

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Exhibit R-2 (PE 0604604A)





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET	(R-2 Exhi	bit)		DATE Feb	February 1997	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604604A Medi	ND TITLE Medium Tactical Vehicles	actical V	ehicles		PRO DH	PROJECT DH07
FY 1997 Planned Program:	ınology Transfer	SBIR/STTR) Pr	ograms				
FY 1998 Planned Program:							
FY 1999 Planned Program: Program not funded							
ary FY	FX 1997 0 5874	FY 1998 0	FY 1999 0	0 0			
FY 1998 Pres Bud Request 2923	5874	3729		0			
Change Summary Explanation: Funding: FY96 - + 1500 DA reprogramming to FMTV (Tech Data Package). FY97 - + 5874 Congressional Add FY98 - + 3729 Reprogrammed during the FY 98 POM cycle.	.ckage). e.						
C. Other Program Funding Summary	FV 1908 FV 1999	00 FY 2000	FV 2001	FY 2002	FY 2003	To	Total
			332484	444648	459061	Cont	Cont
OPA1 5 Ton Extended Svc Pgm (ESP) DV0010	47314	14 81983	81715	32700	32786	Cont	Cont
Project DH07	Page 2 of 5 Pages			Exhibit	Exhibit R-2 (PE 0604604A)	04604A)	
	707					-	Item 70

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	T ITEM JUSTIF	ICATIO	N SHEET	R-2 Exhib	it)	DATE	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ing Development		PE NUMBER AND TITLE 0604604A Medi	D TITLE Medium Ta	отпы Medium Tactical Vehicles			PROJECT DH07
B. Schedule Profile Release Request For Proposal (MTVR) Source Selection Evaluation (MTTR) Award Prototype Contract (MTTR) Award Production Contract (MTTR) * Milestone Complete	FY 1996 1 2 3 X*	4 * 1 *	FY 1997 2 3 X*	4 × ·	FY 1998 2 3	4 L ×	FY 1999 2 3	4
Project DH07		Pa	Page 3 of 5 Pages			Exhibit R-2 (F	Exhibit R-2 (PE 0604604A)	- 1
			708					Item 70
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RD	RDT&E PROGRAM ELEMENT/	RAM EL	EMENT/PR	PROJECT (SOST BE	REAKDO	COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	760
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	g and Manu	facturing I	Development		PE NUMBER AND TITLE 0604604A Medi	AND TITLE A Mediu	m Tactica	ртпе Medium Tactical Vehicles		1	РРОЈЕСТ DH07
A. Project Cost Breakdown Product Development Developmental Testing	eakdown nt ing			FY 1996 2923	FY	FY 1997 5024 707	FY 1998 879 2850	FY 1999			
SBIR/STTR Total	0			2923	• •	143 5874	3729				
B. Budget Acquisition History and Planning Information	tion History and	l Planning Inf	<u>ormation</u>								
Performing Organizations	izations										
Contractor or Government	Contract Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to	7001 XX	EV 1007	TX 1000	EV 1000	Budget to	Total
Activity Product Development Organizations	<u>venicie</u> ent Organizatio	<u>Late</u> ns	EAC	EAC	FT 1990	F I 1990	FT 1997	r i 1990	r i 1999	anaidiiio	riogram
Teledyne	C-FFP	Oct 88	13515	13515	13515						13515
(Prototype) Tactical Truck	C-FFP	Oct 88	14500	14500	. 14500						14500
(Prototype) Stewart Stevenson	C-FFP	Oct 88	17204	17204	17204						17204
(Prototype) Stewart Stevenson	C-FFP	Oct 91	10100	10100	10100						10100
(Tech Data Pkg)	SS-FFP	Inn 92	3416	3416	1916	1500					3416
(Tech Data Pkg	4 4 5 5				<u> </u>	 					
upuate) Stewart Stevenson	SS-CPFF	Sep 92	12774	12774	12774						12774
(Special Bodies Prototype)											
In-House/Eng			3142	3142	1673	150	269	750			3142
Govt Eng (all other fld activities)			1024	1024	1024						1024
Project DH07				Pag	Page 4 of 5 Pages	S		Exhil	Exhibit R-3 (PE 0604604A)	0604604A)	
					402						Item 70

RDT	&E PROG	RAM ELI	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT	COSTB	REAKDO	WN (R-	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	g and Manu	facturing [evelopmen		PE NUMBER AND TITLE 0604604A Medi	AND TITLE	m Tactica	TITLE Medium Tactical Vehicles		a C	PROJECT DH07
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project	Total					Dydest to	Total
Pertorming Activity	or Funding Vehicle	Obligation Date	Activity EAC	UIIICE	Frior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Buaget to Complete	I otat Program
SSEB, TACOM,			191	191		191				1	191
Oshkosh Truck	C-CPFF		2415	2415		488	1927				2415
Corp. (Prototype											
AM General	C-CPFF		2723	2723		488	2235				2723
(Prototype MTTR)			105	40£		106	030	120			105
Camber (Tech Spt			. 402	407		100	007	671			140
SBIR/STTR			143	143			143				143
Support and Management Organizations: N/A	gement Organiz	zations: N/A									
Test and Evaluation Organizations TECOM (APG)	n Organizations	20	7765	7765	7765						7765
(FMTV)											
TECOM (YPG)			3000	3000	3000						3000
(FMTV) TEXCOM			4964	4964	4964						4964
(FMTV)											
TECOM (MTTR)		,	3600	3600			750	2850			3600
Government Furnished Property - None	shed Property -	None									
Subtotal Product Development	velopment				72706	2923	5124	879			81632
Subtotal Support and Management Subtotal Test and Evaluation	l Management				15729		750	2850			19329
Total Project					88435	2923	5874	3729			100961
Project DH07				$P\epsilon$	Page 5 of 5 Pages	es		Exh	Exhibit R-3 (PE 0604604A)	0604604A)	
											7, 70

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RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	DE NUMBER AND TITLE 0604609A Smoke, Obscurant and Target Defeating	PROJECT ating D200
	Stein - Engineering Development	

			27.	oystem - Engineering Developmen	9111551111	J Develo	pinein			
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D200 Smoke/Obscurant Systems	1915	0	0	703	937	2552	4814	8362	Continuing	8362 Continuing Continuing

and obscurant agents, munitions, and devices to improve survivability of the combined arms force, complement combined weapons systems, and enhance force effectiveness weapons. The project in this Program Element supports efforts in the engineering and manufacturing development phase of the acquisition strategy and is therefore correctly Obscurant System, M58, consists of components of the M56 mounted on a M113A3 carrier. The M58 will equip smoke units in heavy units resulting in improved vehicle which provides on-board obscuration of heavy armor systems. The M81 provides IR and MMW screening from smart Anti-Tank Guided Missiles (ATGM) and top attack maneuverability and survivability; (3) M81 MMW/IR Smoke Grenades which support the Vehicle Integrated Defense System; (4) Vehicle Engine Exhaust Smoke System A. Mission Description and Budget Item Justification: This program element supports the conduct of Engineering and Manufacturing Development (EMD) in smoke and combat power. Funding supports (1) Motorized Dual Purpose Mechanical Smoke Generator, M56 mounted on the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) to provide large area visual, infrared (IR) and millimeter wavelength (MMW)-radar obscuration; (2) Generator, Smoke, Mechanical, Mechanized Smoke placed in Budget Activity 5.

the visual obscuration capability of the system from 60 to 90 minutes, and will be developed and tested at CBDCOM. The proven design will then be integrated into the ongoing competitively awarded five-year multi-year production contract for the M56 Smoke Generator System. The Vehicle Engine Exhaust Smoke System (VEESS) will be The M58 will purchase smoke generator components, the driver's viewer enhancer and gas particulate filter units on contracts and furnish as GFE to Anniston Army Depot to integrate the components on the converted platform (M113A3). The M56 P31 Modularity program is an in-house effort in the EMD phase. The program will increase Acquisition Strategy: Project D200 - Smoke/Obscurants: The M58 Mechanized Smoke System, primarily an in-house effort, was type classified from the EMD phase. developed in-house and will be applied to systems via modification work order.

FY 1996 Accomplishments:

- 1515 M56-P31 Modularity: Completed design (drawings/technical data).
 - 300 M56-P3I Modularity: Conducted technical/user testing.
- 100 M56-P3I Modularity: Conducted Milestone III In-Process Review.
- otal 191

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program: Project not funded in FY 98.

Project D200

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Exhibit R-2 (PE 0604609A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUST	IFICAT	HS NOI	EET (R-	-2 Exhib	oit)		DATE Febr	February 1997	7(
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopme	nt	PE NUI 0604 Syst	PE NUMBER AND TITLE 0604609A Smoke, Obscurant and T System - Engineering Development	moke, Ok yineering	bscurant pevelor	and Targ ment	Smoke, Obscurant and Target Defeating ngineering Development]	РРОЈЕСТ D200
 FY 1999 Planned Program: 703 VEESS-Integrate engineering study/proof of principle and initiate maintenance work order preparation and approval. Total 	g study/proof	of principle	and initiate	maintenance	work order	preparation	and approva	÷		
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Budget Request		FY 1996 1945 2000 -85 1915		FY 1997	FY 1998	FY 1999 2745 703	9 <u>9</u>			
Change Summary Explanation: FY 1999 funding (-2042) reprogrammed to PE 0602622A, A552 to support technology base for P3I MMW program.	-2042) reprogi	rammed to l	PE 0602622	A, A552 to sı	upport techn	tology base f	or P31 MMV	V program.		
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
RDTE, A Budget Activity 2, PE 0602622A	1728	2259	4739	1699	4167	4231	4314	4411	Cont'd	Cont'd
Project A552 Smoke/Novel Effects Munitions RDTE, A Budget Activity 4, PE 063627A, Project	2623	6246	0	0	0	0	0	5155	Cont'd	Cont'd
DE79 Smoke, Obscurant and Equipment Defeating Systems OPA-3,A Appropriation M99103, M56 Smoke Generator	0	12506	12560	19115	0	0 10566	20831	18882	Cont'd Cont'd	Cont'd Cont'd
M99101, M38 Smoke Generator M99104, M157A2 Smoke Generator G70700, LVOSS	5052	3475	2164	4752	2317	0 0	0 0	00	00	8527 9233
			Dane John Dane	Y Daves			л igi	Exhibit R-2 (PF 0604609A)	304609A)	
Project D200			ruge 2 <i>U</i>)	4 1 ages						Item 71
			71/							



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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ring Development	PE NUMBER AND TITLE 0604609A Smoke, Obscurant and Target Defeating System - Engineering Development	scurant and Tar Development	get Defeating	Р R ОЈЕСТ D200
D. Schedule Profile	FY 1996	FY 1997	FY 1998	FY 1999	4
M56-Complete P3I Modularity Design M56-Complete P3I Mod Tech/User Test M56-Conduct P3I Modularity MS III VEESS-Initiate Maint Work Order *Milestone completed	*				
Project D200	Pa	Page 3 of 4 Pages	Exhibi	Exhibit R-2 (PE 0604609A)	(1
		713			Item 71

RDT&E PROGRAM ELEMENT/PROJEC	PROJECT COST BREAKDOWN (R-3)	JOWN (R-3)	DATE	February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE. 0604609A Smoke, Obscurant and T System - Engineering Development	ke, Obscuran eering Develc	arget De	eating	PROJECT D200
A. Project Cost Breakdown Primary Hardware Development Systems Engineering Integrated Logistics Support Quality Assurance Reliability, Maintainability and Availability Configuration Management Technical Data Test and Evaluation Government Engineering Support Program Management Personnel Hardware Total	1996 FY 1997 290 422 190 100 50 50 90 263 200 150 150	FY 1998	T03 703		
B. Budget Acquisition History and Planning Information: Not applicable. Project D200	Page 4 of 4 Pages		Exhibit R-3 (PE 0604609A)	7E 0604609A	
	714				Item 71

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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA'	TION S	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NI 06 0	PE NUMBER AND TITLE 0604611A Javelin	птге avelin				.	РRОЈЕСТ D499
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate		Cost to Complete	Total Cost
D499 JAVELIN	2249	6014	8018	5277	0	0	0	0	0	634870

developments will be considered and modifications studied to defeat these devices if necessary. Integration of Advanced Main Charge Warhead and Lethality Improvement A. Mission Description and Budget Item Justification This Program Element (PE) provides for the continuation of Engineering and Manufacturing Development (EMD) of a manportable antitank weapon system for the combined arms team employment. The infantry must have the capability to defeat numerically superior armored forces. The present medium infantry antitank weapon is DRAGON. The system developed within this PE will replace the DRAGON to provide enhanced lethality for the early entry force. It will have a high kill rate against all known armor threats at extended ranges under day/night, adverse weather conditions and in the presence of battlefield Tracker Enhancement technologies will be pursued. This project supports research efforts in the engineering and manufacturing development phase of the acquisition obscurants. This system will be hardened against countermeasures and will not require extensive training for effective employment. Active protection system strategy and therefore is appropriate to Budget Activity 5.

Acquisition Strategy: Not Applicable.

FY 1996 Accomplishments:

- 93 Program Management
- 1667 Test Support
- 378 Lethality Improvement Tracker Enhancement (LITE)
- 111 Advanced Main Charge Warhead (AMCW)
 - Total 2249

FY 1997 Planned Program:

- 301 Program Management
 - 600 Test Support
- 1035 Lethality Improvement Tracker Enhancement
 - 3931 Advanced Main Charge Warhead
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) 147
- tal 60

Exhibit R-2 (PE 0604611A)

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RDT&E BUDGET ITEM JUST		TION SH	FICATION SHEET (R-2 Exhibit)	Exhibit		DATE	i i	February 1997	7(
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Development	PE NUN 0604	PE NUMBER AND TITLE 0604611A Javelin	lin				F O	РRОЈЕСТ D499
FY 1998 Planned Program: 400 Program Management 1044 Test Support 1403 Lethality Improvement Tracker Enhancement 5171 Advanced Main Charge Warhead Total 8018 FY 1999 Planned Program: 264 Program: 4661 Test Support 352 Advanced Main Charge Warhead Total 5277	icker Enhancement arhead arhead					,			
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 973 1000 +1249	FY 1997 1643 6014	FY 1998 1548 8018	1 <u>998</u> 1548 8018	FY 1998 0				
••	FY96 funding (+1249) reprogrammed in for tracker performance upgrade. FY 98/99 adjustments (FY 98 +6470/FY 99 +5277) to support Advanced Main Charge Warheads.	or tracker perfo 9 +5277) to sup	rmance upgrade	e. Main Charg	e Warheads.				
C. Other Program Funding Summary Missile Procurement, Army	FY 1996 FY 1997	FY 1998	FY 1999 FY	$\overline{ ext{FY}} 2000 \overline{ ext{FY}}$	FY 2001 FY	FY 2002 FY	FY 2003	To <u>Complete</u> ,	Total Cost
CC0007 Javelin (AAWS-M) D. Schedule Profile	; ? 199	143112	326623 Y 1997	465962 4	1 Y 199	475873 8	7061	95314 FY 1999	2756628
Conduct System Level Live Fire Tests First Unit Equipped Full Rate Production Decision (ASARC) Award Year One of First Multiyear Contract	1 2 3 X* X*	4 L	5 ××	4	6	4		72 8	4
Project D499		Page 2 of 4 Pages	Pages			Exhibit R	-2 (PE 0	Exhibit R-2 (PE 0604611A)	1. Tom 77
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604611A Javelin	PROJECT D499
D. Schedule Profile 1 2 3 4	FY 1997 FY 1998	FY 1999 4 1 2 3 4
Advanced Main Charge Warhead(AMCW) AMCW Final Design AMCW Lethality Test AMCW Live Fire Phase I/II Tests	×	× ×
	Posses of 4 Doron	Evhihit D. 2 (DE OROMR414)
Project D499		Item 72

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RDT&E P	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	EMENT/PRC	JECT C	OST BF	SEAKDC	JWN (R-	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Manufacturing I	Development		PE NUMBER AND TITLE 0604611A Jave	AND TITLE A Javelin	u			a a	РКОЈЕСТ D499
A. Project Cost Breakdown Program Management	U i		FY 1996 93	FY]	FY 1997 301	FY 1998 400	<u>FY 1999</u>			
Test Support			1667		009	1044	4661			
Lethality Improvement Tracker Enhancement	er Enhancement		378	(1035	1403	•			
Advanced Main Charge Warnead SBIR/STTR	ıead			•	3931 147	1/.15	352			
Total			2249	•	6014	8018	5277			
B. Budget Acquisition History and Planning Information Performing Organizations	ory and Planning Int	<u>formation</u>								
Contractor or Contract										
Government Method/Type	I/Type Award or	Performing Activity	Project Office	Total Prior to					Budget to	Total
		EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
men	nizations									
			465500	493456	0	3884	ì	•		493456
_	28Mar94	N/A	N/A	4521	111	1082	5171	352		14086
SBIR/STTR	28Jun96	N/A	N/A		3/8	1802 147	1403			2963
Support and Management Organizations	Organizations									
Support Contractor 8(a) CPFF	'FF	N/A	N/A	6747						6747
Program Mgmt				80232	93	301	400	264		81290
Test and Evaluation Organizations	zations				į	Č.		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
TECOM				19513	702	000	1044	4661		26523
OF IEC				C+00	25					25
Government Furnished Property: Not Applicable.	perty: Not Applicabl	ú			1					}
Subtotal Product Development Organizations	tt Organizations		7	497977	489	5113	6574	352		510505
Subtotal Support and Management Organizations	ment Organizations			62698	93	301	400	264		88037
Subtotal Test and Evaluation Organizations	Organizations			28356	1667	009	1044	4661		36328
Total			-	613312	2249	6014	8018	5277		634870
			Ę		į		<u> </u>	בי מי מי	70000	
Project D499		to the	Fagu	rage 4 of 4 rages	<u>ي</u>		EXD	EXhibit K-3 (PE 0604611A)	0604611A)	
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe l	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	evelopm	ent	PE NI 090	PE NUMBER AND TITLE 0604619A Land	E NUMBER AND TITLE 0604619A Landmine Warfare	Warfare			.	РРОЈЕСТ D088
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D088 Wide Area Munition (WAM)	29453	26288	19800	23075	0	0	0	0	0	251916

planned product improvement Basic WAM with two-way command and control and redeployable capabilities will use advanced sensors, computer technology, and warhead A. Mission Description and Budget Item Justification: The Wide Area Munition (WAM), a "smart," remotely-reprogrammable antitank mine, provides unique control program provides for Engineering and Manufacturing Development (EMD) of the Basic WAM deployed by hand emplacement with one-way communications. The pretechnology to extend the range and lethality of the WAM. The project in this Program Element supports the EMD phase of the acquisition strategy for the WAM and is, and offensive capability for a variety of missions. WAM will significantly reduce Army losses by using advanced smart munitions technology on the battlefield. The therefore, appropriately placed in Budget Activity 5. Acquisition Strategy: The Basic WAM transitioned to Low Rate Production (LRP) in 3QFY96. A sole source Fixed Price Incentive Fee contract was awarded to the EMD contractor for the LRP quantity. Type classification standard is planned for 4QFY97. Production buys will be included under the LRP contract as Firm Fixed Price options. A sole source Cost Plus Incentive Fee contract for EMD of an improved WAM was awarded to the Basic WAM developer in FY 1996. Type Classification standard of the improved WAM is planned for 4QFY99.

FY 1996 Accomplishments:

•	4887	4887 Completed basic WAM integration and assembly design
•	12291	Fabricated technical test/initial operational test and evaluation (TT/IOTE)/live fire hardware for basic
•	0089	Initiated TT/IOTE/live fire test for basic WAM
•	650	Designed and built basic WAM prototype individual trainer and collective trainer software
•	4825	Initiated design efforts for WAM PIP integration of two-way command & control and redeployabilities
Total	29453	

ic WAM

<u>i</u>

FY 1997 Planned Program:

•	7747/	2142/ Complete 11/101E/live fire test for basic WAIM
•	750	750 Conduct testing for basic WAM individual trainer and collective trainer software
•	3508	3508 Conduct WAM PIP Initial Platform and Control Unit design effort
•	603	Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Pro
Total	26288	

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Project D088

Exhibit R-2 (PE 0604619A)

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RDT&E BUDGET ITEM JUST	EM JUSTIFIC	ATIO	N SHE	ET (R-;	IFICATION SHEET (R-2 Exhibit)	it)		DATE Feb i	February 1997	7
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Development		PE NUMBER AN 0604619A		ס דודר ב Landmine Warfare	Warfare			PR DC	PROJECT D088
FY 1998 Planned Program: 8841 Conduct WAM PIP preliminary design and functional configuration audit 2809 Procure hardware for WAM PIP contractor prototype testing and TT/IOTE 3300 Conduct contractor prototype testing 650 Conduct testing of WAM PIP prototype individual trainers and collective trainer software 4200 Complete design of control station, trainers and software Total 19800	ary design and function PIP contractor prototy testing Prototype individuatation, trainers and so	onal config ype testing I trainers a	guration au 5 and TT/IC ind collecti	odit OTE ive trainer	software					The Market Name of the Control of th
FY 1999 Planned Program: 10130 Complete WAM PIP design and conduct functional configuration audit 5145 Complete fabrication of TT/IOTE hardware for WAM PIP 6500 Complete TT/IOTE for WAM PIP 1300 Complete testing of trainers and software Total 23075	and conduct function IOTE hardware for W M PIP and software	ctional configui for WAM PIP	ration audi	₩.						
B. Project Change Summary FY97 President's Budget Appropriated Value	EY.	FY 1996 30179 31028	FY 1997 17609 26288		F <u>Y 1998</u> 17500	<u>FY 1999</u> 19027	7			
Adjustments to Appropriated Value FY 1998 President's Budget Request		-15/5 29453	0 26288	0 88 0	19800	23075	Ś			
Change Summary Explanation: Funding: FY 1998 (+2300) and FY 1999 (+4048) adjustm scheduled (4Q99) Type Classification.	(+4048) adjustments	were requi	ired to offs	et shortfall	ls in WAM	basic progra	m and allow	ents were required to offset shortfalls in WAM basic program and allow WAM PIP to maintain	to maintain	
C. Other Program Funding Summary RDTE, A Budget Activity 5 PE 0604808A, Project D016, Mine Systems Engineering Development	FY 1996 FY 1997 4968 5384		FY 1998 E	FY 1999 3600	FY 2000 4000	FY 2001 11255	FY 2002 11960	FY 2003 21786	To Compl Cont'd	Total Cost Cont'd
Ammunition, A Appropriation WAM, E78100 WAM Individual Trainer, E78103 WAM Collective Trainer, E78104	14581 9 1819 0	9991 0 1928	15323 0 0	17891 0 0	28132 0 1721	31469 0 1624	60972 0 0	61092 0 0	Cont'd 0	Cont'd 1819 5273
Project D088		Pa	Page 2 of 4 Pages	ages			Exhibi	Exhibit R-2 (PE 0604619A)	304619A)	Itom 72
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RDT&E BUDGET ITEM JUS	TIFICATIO	BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	bit)	DATE February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	nent	PE NUMBER AND TITLE 0604619A Landmine Warfare	e Warfare	id O	РRОЈЕСТ D088
D. Schedule Profile FY 1996	6 3 4 1	FY 1997 2 3 4 1	FY 1998 2 3 4	FY 1999 1 2 3	4
Conduct Basic WAM Low Rate Production Milestone Review Complete Live Fire Test Complete TT/IOTE Testing Complete Functional Configuration Audit Complete Basic WAM Milestone III Complete Initial WAM PIP Trade-Off Studies & Initiate Design Efforts Complete WAM PIP Ground Platform Preliminary Design Review Complete Contractor System Test WAM PIP Functional Specification Complete Procurement, Fabrication of TT System Hardware Complete IOT&E Testing WAM PIP Milestone III	* * *	××× ×	×	××	×
* Milestone Completed	Ä	Page 3 of 4 Pages	m X	Exhibit R-2 (PE 0604619A)	
rioject Duso		721			Item 73

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT C	OST BF	REAKD(JWN (R-	3)	DATE	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604619A Land	AND TITLE A Landn	ЭППЕ Landmine Warfare	are			PROJECT D088
A. Project Cost Breakdown Primary Hardware Development Test and Evaluation Government Engineering Support Government Program Management SBIR/STTR Total	EY 1996 18621 3321 6735 776 29453	EY 1997 17080 2501 5436 668 603 26288	7.1997 17080 2501 5436 668 603 26288	EY 1998 12850 1900 4300 750 19800	EY 1999 10678 6000 5597 800			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contract Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
1996 40443 1990 138876	40443 138876	0 120090	2000	14915 2165	12850	10678	0 0	40443 138876
Support and Management Organizations ARDEC PM-MCD Other (Misc) SBIR/STTR		15803 3452 9254 0	3072 776 3663 0	3441 668 1995 603	2500 750 1800 0	3050 800 2547 0	0000	27866 6446 19259 603
Test and Evaluation Organizations TECOM		4701	3321	2501	1900	0009	0	18423
Government Furnished Property: None.								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		120090 28509 4701 153300	18621 7511 3321 29453	17080 6707 2501 26288	12850 5050 1900 19800	10678 6397 6000 23075		179319 54174 18423 251916
Project D088	Page	Page 4 of 4 Pages	S		Exhi	Exhibit R-3 (PE 0604619A)	0604619A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	k-2 Exhi	bit)		DATE Fe!	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm)evelopm	ent	PE NI 0 90	PE NUMBER AND TITLE 0604622A Fami	PENUMBER AND TITLE 0604622A Family of Heavy Tactical Vehicles	Heavy Ta	actical Vo	ehicles		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	2605	1958	0	0	0	0	13757	18773	Continuing	Continuing
D659 Family of Heavy Tactical Vehicles	803	1958	0	0	0	0	0	0	2761	2761
DE43 Semi-Trailer Van	1802	0	0	0	0	0	0	0	1802	1802
DE49 Heavy Expanded Mobility Tactical Truck	0	0	0	0	0	0	8785	8831	Continuing	Continuing
DE53 Line Haul/Light Equipment Transporter	0	0	0	0	0	0	4972	9942	Continuing	Continuing

These missions include the following: line haul, local haul, unit resupply, and transporting water, ammo, and general cargo. This program element supports research efforts in the engineering and manufacturing development phases of the acquisition strategy and is therefore correctly placed in Budget Activity 5. Mission Description and Budget Item Justification: Program element funds various heavy tactical vehicle capabilities to support combat and combat support missions.

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Exhibit R-2 (PE 0604622A)

RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NI 0 0 0	PE NUMBER AND TITLE 0604622A Fami	ттге amily of	Heavy T	E NUMBER AND TITLE D604622A Family of Heavy Tactical Vehicles	ehicles		РРОЈЕСТ D659
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D659 Family of Heavy Tactical Vehicles	803	1958	0	0	0	0	0	0	2761	2761

A. Mission Description and Justification: This project supports requirements to develop expanded heavy tactical vehicle capabilities to meet the emerging needs of Army users. Specific requirements have been identified for development of alternate flatrack studies; a Palletized Load System (PLS) Universal Power Interface Kit, which will provide interface for various PLS flatrack or module-based applications; a Heavy Expanded Mobility Tactical Truck-Load Handling System (HEMTT-LHS), required to determine the effectiveness of the lighter PLS in meeting the mission requirement of airborne units through its enhanced air deployability; the HEMTT Extended Service Program (ESP); and the Forward Repair System (FRS), intended to meet the requirements for a maintenance shop capability to keep up with rapidly moving combat

Acquisition Strategy: The acquisition strategy is to develop and test prototypes to determine producibility and feasibility of incorporating vehicles into future production contracts

FY 1996 Accomplishments:

- Flatrack Prototype Overrun/Testing/Studies.
- GFE for Prototype/Concept Evaluation (FRS)
 - Vehicle Modeling for 5000 Gallon Fueler.
 - HEMTT-LHS Conversion.
- PLS Universal Power Interface Kit Development. 9
- Modeling/Testing for Fuel Tank Flatrack/Rollover Studies. 220 90 803
 - PLS Alternator.

Total

FY 1997 Planned Program:

- Analysis of HEMTT ESP design alternatives
- Analysis of selected designs
- HEMTT ESP modeling 200 570 380
 - HEMTT ESP testing
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs

Total

Project D659

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RDT&E BUDGET ITEM JUS	JUST	IFICAT	ION SH	TIFICATION SHEET (R-2 Exhibit)	-2 Exhit	oit)		DATE Fe	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	lopme	nt	PE NUI 0604	PE NUMBER AND TITLE 0604622A Fami	ITLE amily of I	Heavy Ta	אס אזוזור Family of Heavy Tactical Vehicles	ehicles		РКОЈЕСТ D659
FY 1998 Planned Program: Program not funded in FY 98	86							•		
FY 1999 Planned Program: Program not funded in FY 99	66									
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 824 845	FY	1997 0 1958	FY 1998 0	FY 1999 0	6 0			
Adjustments to Appropriated Value FY 1998 Pres Bud Request		-42 803		1958	0		0			
Change Summary Explanation: Funding: FY97 (+1958) Congressional increase to support development of the HEMTT ESP	Congress	ional increa	ise to suppor	t developme	ent of the HI	EMTT ESP				
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
OPA1, DA0500, Family of Heavy Tactical Vehicles	119655	243841	9071	162647	86069	97389	124946	124254	Cont	Cont
D. Schedule Profile F7	FY 1996	4	FY 2	FY 1997	1	FY 1998	% 4	-	FY 1999	4
Provided GFE for FRS Prototype FRS Concept Evaluation/Test Awarded Prototype Contract (HEMTT- LHS) Award HEMTT Dev/Prototype Contract HEMTT ESP test		* *	×		×					
*Milestone Complete										
Project D659		:	Page 3 of 7 Pages	Pages			Exhibi	Exhibit R-2 (PE 0604622A)	(604622A)	

RDT8	RE PROG	RAM ELE	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT C	SOST BF	REAKDO	WN (R-	<u></u>	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	and Manu	facturing D	evelopment		PE NUMBER AND TITLE 0604622A Fami	AND TITLE A Family	of Heavy	ना⊓⊑ Family of Heavy Tactical Vehicles	/ehicles	□	PROJECT D659
A. Project Cost Breakdown Product Development Developmental Testing SBIR/STTR Total	kdown			FY 1996 590 213 803	FY	1997 1150 760 48 1958	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Activity	on History and ations Contract Method/Type or Funding	I Planning Info Award or Obligation Date	ormation Performing Activity FAC	Project Office FAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total
Developmen Truck	t Organizatio	ns Sen 96				96				•	94
Corp Oshkosh Truck	FFP	96 deS				213					213
Corp. Niehoff In-House Eng GFE Oshkosh Truck	FFP CPFF	Sep 96 Jul 96 Mar 96 Mar 97				90 102 91	1150				90 102 91 1150
Corp SBIR/STTR	one Organis	rations. Mone					48				48
Tecom Sep 96	Organization:	Sep 96				213	760				973
Government Furnished Property: None	ed Property:	None									
Subtotal Product Development	slopment Management					290	1198				1788
Subtotal Test and Evaluation Total Project	luation					213 803	760 1958				973 2761
Project D659				Pag	Page 4 of 7 Pages	Sž		Exh	Exhibit R-3 (PE 0604622A)	0604622A)	
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RDT&E BUDGET ITEM JUST	EM JUS	TIFICA.	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE NI 060	PE NUMBER AND TITLE 0604622A Fami	E NUMBER AND TITLE 3604622A Family of Heavy Tactical Vehicles	Неаvу Т	actical V	ehicles	d L	РRОЈЕСТ DE43
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DE43 Semi-Trailer Van	1802	0	0	0	0	0	0	0	1802	1802

A. Mission Description and Justification: This project supports requirements to develop expanded heavy tactical vehicle capabilities to meet the emerging needs of Army heating/cooling system and a recirculation system. This effort also includes fluid level and temperature gauges, and upgraded lighting systems not currently available on the enhance the XM1098 capability by maintaining the tanker water temperature in the desirable range of 40-80 degrees Fahrenheit. The kit will also provide the capability of providing on-demand hot (180 degree F) and cold (55 degree F) water, regardless of ambient conditions. This funding supports the second phase of this project which will Water Carrier in the Army's inventory. This vehicle can only be utilized in warm weather climates where there is no danger of the water freezing or becoming too hot for consumption. The users' water requirements will be better satisfied by enabling the XM1098 to be used in a variety of temperature scenarios. The heater/chiller kit will users. Specific requirements have been identified for development of potable water in the corps/brigade support areas. Currently, the XM1098 is the only 5000 Gallon be an integrated technical demonstration of the feasibility of a heater/chiller system comprised of an external insulation, integrated power supply, an on-demand XM1098.

Acquisition Strategy: The acquisition strategy is to develop and demonstrate two technology test beds to address the potential technology enhancements to the XM1098.

FY 1996 Planned Program:

- Market survey of Technical Alternatives.
- Thermal Simulation and Analysis.
- System characteristics (Develop Corrosion Resistant Coating). 200
- Cross Country Mobilization Simulation & Analysis. 200
 - Technology Integration.
 - Conceptual Design.
- Technology Component Acquisition.
 - System Modification.
- System Installation.
- Fechnology Demonstration. 150 200 400 50 200 52
 - Final Report.

FY 1997 Planned Program: Program not funded in FY 97

Project DE43

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Exhibit R-2 (PE 0604622A)

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Per Number And Title Per Number And Title Per Number And Title	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET	(R-2 Exhib	it)	DATE February 1997	1997
ogram: Program not funded in FY 98 ogram: Program not funded in FY 99 Summary Budget 1848 0 1900 0 1900 1900 1900 1802 0 0 0 0 0 0 0 0 0 0 0 0	BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AN 0604622A	ID TITLE Family of H	eavy Tactical \	/ehicles	PROJECT DE43
Summary: Program not funded in FY 99 Summary: FY 1996 Budget 1848 0 0 0 0 priated Value -98 equest 1802 0 0 0 0 FY 1996 FY 1996 TX *	FY 1998 Planned Program: Program not funded in FY 98					
Summary EY 1996 FY 1997 FY 1998 FY 1999 FY 1999 1900 1900 1900 1900 1900 1900 1900 1900 1900 1802 1	FY 1999 Planned Program: Program not funded in FY 99					
Funding Summary: None Fy 1996 Fy 1997 Fy 1998 1 2 3 4 1 2 3 X* Ind Analysis S. (Develop Soating) Sating) Sization Simulation X X A A Tration Fy 1996 Fy 1997 Fy 1998 Fy 1997 Fy 1998 Fy 1997 Fy 1998 Fy	FY	FY 199	FY 1998 0	FY 1999 0		
1 2 3 4 1 2 3 4 1 2 3 4 1 2 3						
und Analysis X* St. (Develop X* St. (D	FY 1996	Y 199	-	Y 1998	Y 199	
Page 6 of 7 Pages	ysis X* lop X* imulation	××		×		
rage o of / rages	*Milestone Complete			ij	מסיים ביים ביים ביים ביים ביים ביים ביים	
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RDT&E PROGRAM ELEMENT/PROJECT		ST BRE	COST BREAKDOWN (R-3)	(R-3)		DATE F	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE 0	PE NUMBER AND TITLE 0604622A Fami	PE NUMBER AND TITLE 0604622A Family of Heavy Tactical Vehicles	leavy T	actical \	/ehicles		PROJECT DE43
A. Project Cost Breakdown Project Development Integration/Demonstration Total	FY 1996 1802 1802	FY 1997	FY 1998	80	FY 1999			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations CAETECH CPFF Nov 95 Support and Management Organizations: None Test and Evaluation Organizations: None	Project Office P EAC FY	Total Prior to FY. 1996 FY	FY 1996 FY 1997 1802		FY 1998	FY 1999	Budget to Complete	Total Program 1802
Government Furnished Property: None Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation			1802					1802
Subtotal Test and Evaluation Total Project			1802					1802
Project DE43	Page 7	Page 7 of 7 Pages			Exhik	oit R-3 (PE	Exhibit R-3 (PE 0604622A)	

RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	FION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fek	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NI 000	PE NUMBER AND TITLE 0604633A Air T	E NUMBER AND TITLE 1604633A Air Traffic Control	Control			<u>a</u> O	РRОЈЕСТ D586
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D586 Air Traffic Control	5073	7377	1705	1729	2026	2079	2251	2354	2354 Continuing Continuing	Continuing

Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity tower system is designed to integrate with secure modernized aircraft communications. This is a non-developmental item (NDI) program. Fixed base ATC efforts funded capability in support of Army tactical airfields, remote landing zones, drop zones, pickup zones and temporary helicopter operating areas worldwide. MOTS automated A. Mission Description and Budget Item Justification: This program element funds continuously evolving efforts for the development of Air Traffic Control (ATC) (ATNAVICS) and Mobile Tower System (MOTS). This system provides urgently needed communications and precision/non-precision approach and flight following by this line include Navigation Air Systems Modernization, Communication System Modernization and digitization of the ATC structure. The tasks in this Program systems for both tactical and fixed base applications. It funds the integration and qualification of an Air Traffic Navigation, Integration, and Coordination System

components to include design, development, and testing of an integrated prototype over a three year period. An additional component of the strategy is to continue concept Acquisition Strategy: The acquisition strategy is to procure an ATNAVICS prototype through a Cost Plus Fixed Fee (CPFF) contract for integration of electronic/radar exploration and design definition of the MOTS.

FY 1996 Accomplishments:

ATNAVICS

- Continued Prototype System for Developmental Testing/Initial Operational Test Evaluation 4657
- 295 System performance

TAIS

- 50 System concept design definition
- 71 Conducted suitability study and cost saving data
- al 50

Project D586

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Exhibit R-2 (PE 0604633A)

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	RDT&E BUDGET ITEM JUSTIFICATIO	FIFICATION SHEET (F	(R-2 Exhibit)		DATE February 1997
BUDGET ACTIVITY 5 - Engineering	BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604633A Air T	PE NUMBER AND TITLE 0604633A Air Traffic Control	ontrol	PROJECT D586
FY 1997 Planned Program: ATNAVICS 6577 Continu 774 Develop MOTS 50 Pre-ma 176 Small F	ie development of prototype pmental and Operational Testing rket analysis for state of the art syste susiness Innovation Research/Small	ms solution Business Technology Transfer (SBIR/STTR) Programs	.IR/STTR) Progra	su	
FY 1998 Planned Program: ATNAVICS • 1130 Develo • 475 Refurbi MOTS 50 Market • 50 Evaluat Total 1705	rogram: Development and Operational Testing Refurbishment for Fielding Market Analysis Evaluation and Suitability Study and Cost Savings Data				
FY 1999 Planned Program: MOTS 360 Design 1369 Procure Total 1729	rogram: Design Definitization/Integration Analysis Procure Prototype System for Developmental Testing				
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	Summary FY 1996 Budget 1764 ropriated Value +3260 tequest 5073	FY 1997 5549 7377 7377	FY 1998 1825 1705	FY 1999 1860 1729	
Change Summary E:	Change Summary Explanation: Funding: FY 96 (+3260) reprogrammed in support of ATNAVICS development. FY97 (+1828) Congressional reprogramming from procurement for ATNAVICS.	oport of ATNAVICS	development. F	797 (+1828)	Congressional reprogramming from
Project D586	P	Page 2 of 5 Pages			
		731			Item 75

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATION S	HEET (R-2 Exhi	bit)	DATE Fet	February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604633A Air Traffic Control	Control		PROJECT D586
C. Other Program Funding Summary EY 1996 I APA AA0050 - Air Traffic Control	FY 1997 FY 1998 6395 5802	8 FY 1999 FY 2000 2 5854 9210	FY 2001 FY 2002 40256 30797	<u>12</u> <u>FY 2003</u> 17 36364	To Total Compl Cost Cont'd Cont'd
ATNAVICS System Performance ATNAVICS System Performance ATNAVICS Testing MOTS Pre-Market Analysis (State of Art Sys Solution) ATNAVICS Development/Operational Testing MOTS Market Analysis MOTS Evaluation and Suitability Study/Cost Savings Data ATNAVICS Refurbishment for Fielding MOTS Design Definitization/Integration Analysis Procure MOTS Prototype System for Development Testing	FY 1996 2 3 4 X	FY 1997 1 2 3 4 X X X	FY 1998 1 2 3 X X X X X X X X X	4 - × × ×	FY 1999 2 3 4 X X X
Project D586	Page 3 of 732	Page 3 of 5 Pages 732	EX	Exhibit R-2 (PE 0604633A)	504633A) Item 75





RDT&E PROGRAM ELEMENT/PR	PROJECT C	SOST BI	ZEAKDO	COST BREAKDOWN (R-3)	3)	DATE F 6	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604633A Air T	AND TITLE) ΤΙΤ∟Ε Air Traffic Control	rol		1	РКОЈЕСТ D586
A. Project Cost Breakdown Contractor Engineering Support Primary Hardware Development Program Management Support Development Test and Evaluation Government Furnished Equipment SBIR/STTR Total	FY 1996 344 4061 456 212 5073	EX	FY 1997 297 5943 387 574 176	EY 1998 145 430 1130 1705	FY 1999 145 969 435 180			
B. Budget Acquisition History and Planning Information: Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Product Development Organizations Raytheon CPFF Mar 96 Raytheon CPFF Dec 97 MOTS TBD Dec 99 Support and Management Organizations	13631	9570	4061	5943		696	0 715 Cont	13631 6658 Cont
Army Aviation & Troop Command (ATCOM) CECOM		708 1248	456 344	387	345 230	350 230	Cont	Cont
Test and Evaluation Organizations TEXCOM SBIR/STTR				574 176	1130	180	Cont	Cont 176
					i	L 6 6 8 8		
Project D586	Pag	Page 4 of 5 Pages 733	es		EXD	EXNIBIT K-3 (PE 0604633A)	U604633A)	Item 75

RDT&E PROC	3RAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BF	REAKDO	WN (R-	3	DATE F	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ıfacturing	Development	PE NUMBER AND TITLE 0604633A Air T	AND TITLE A Air Tra	ΣΤΙΤΙΕ Air Traffic Control	·ol		± —	РРОЈЕСТ D586
Government Furnished Property Contract Method/Type Award Item or Funding Obligat Description Vehicle Date Product Development Property Support and Management Property: None Test and Evaluation Property: None	Award or Obligation <u>Date</u> ty: None	Delivery <u>Date</u>	Total Prior to FY 1996	FY 1996 212	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u> 212
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			9570 1956 11526	4273 800 5073	5943 684 750 7377	575 1130 1705	969 580 180 1729	Cont Cont Cont	Cont Cont Cont
·			,						
Project D586		Pag	Page 5 of 5 Pages	50		Exh	Exhibit R-3 (PE 0604633A)	0604633A)	Itam 75

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	R-2 Exhi	bit)		DATE FeI	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE N 06(PE NUMBER AND TITLE 0604640A Advanced Command and Control Vehicle	тіт <u>ге</u> Advancec	I Comma	nd and C	ontrol		PROJECT DG27
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DG27 Future Command and Control Vehicle	17306	7734	8867	0	0	0	0	0		0 111934
A. Mission Description and Budget Item Justification: The Command and Control Vehicle (C2V) is a highly mobile, survivable, and responsive tracked platform designed for use by battalion through corps battle staffs in heavy force operations. It provides a reconfigurable (tailorable) command and control capability able to host both current and future command, control, communications, computer, and intelligence (C4I) systems. The C2V supports the Army's Force XXI/Digitization efforts and will be compatible with Army Tactical Command and Control Systems. The C2V began as a Desert Storm initiative in response to shortcomings in the current M577 Command Post Vehicle. The C2V is currently in Low Rate Initial Production (LRIP) and is appropriately placed in Budget Activity 5.	ation: The Caffs in heavy incations, com nd Control Sow Rate Initions	Command ar force opera huter, and i ystems. The all Productional	nd Control V tions. It pr ntelligence c C2V began n (LRIP) an	ommand and Control Vehicle (C2V) is a highly mobile, survivable, and responsive tracked platform force operations. It provides a reconfigurable (tailorable) command and control capability able to host puter, and intelligence (C4I) systems. The C2V supports the Army's Force XXI/Digitization efforts and stems. The C2V began as a Desert Storm initiative in response to shortcomings in the current M577 all Production (LRIP) and is appropriately placed in Budget Activity 5.	onfigurable () is a highly onfigurable () is. The C2V Storm initial iately placed	mobile, surv tailorable) co supports the tive in respoi	ivable, and ommand and Army's Forse to shortc. ctivity 5.	responsive the control cap ree XXI/Dig comings in the	racked platt nability able itization eff ne current M	orm to host orts and 1577
Acquisition Strategy: C2V approved for type classification and Low Rate Initial Production (LRIP) quantity of 46 vehicles in 4Q96. Based on the LRIP decision, the Army will procure 439 C2V vehicles. Follow-on Sole-Source/Firm Fixed Price & Cost Plus Incentive Fee contracts and Fixed Price with Options (FPO) contracts are in place for C2V Low Rate Initial Production (LRIP). C2V LRIP focus on testing and production planning to meet Initial Operational Test and Evaluation (IOTE) and First Unit Equipped (FUE) in FY99.	sification and ole-Source/F C2V LRIP f	I Low Rate I irm Fixed Pr ocus on testi	Initial Produrice & Cost	Low Rate Initial Production (LRIP) quantity of 46 vehicles in 4Q96. Based on the LRIP decision, the rm Fixed Price & Cost Plus Incentive Fee contracts and Fixed Price with Options (FPO) contracts are in our on testing and production planning to meet Initial Operational Test and Evaluation (IOTE) and Firs	o) quantity of ve Fee contra ning to meet	f 46 vehicles acts and Fixe Initial Opera	in 4Q96. B d Price with rtional Test	ased on the] Options (FF ind Evaluati	LRIP decisi 20) contract on (IOTE) a	on, the s are in ind First
FY 1996 Accomplishments 4525 Developed Technical Data Package; Began Producibility Engineering Effort 2657 Logistics Engineering Effort 4234 Continued Design Engineering; Component/Production Verification and Contractor Test Support 961 Prototype Manufacturing 759 Began Live Fire Testing 2016 Conducted Technical Testing and Limited User Testing 2154 Project Management Total 17306	tckage; Bega ig; Compone , and Limited	n Producibilit nt/Production User Testing	Production Verification and Cor VProduction Verification and Cor Jser Testing	ring Effort on and Contt	ractor Test S	upport				
FY 1997 Planned Program:	:kage/Contin	ue Producib	ility Engine	ering Effort						
Project DG27			Page I o	Page 1 of 4 Pages			Exhib	Exhibit R-2 (PE 0604640A)	0604640A)	Itam 76

	RDT&E BUDGET ITEM JUST	IIFICA1	IS NOI	IFICATION SHEET (R-2 Exhibit)	-2 Exhit	oit)		DATE Feb	February 1997	7
BUDGET ACTIVITY 5 - Engineerii	BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	ınt	PE NU 060 Veh	PE NUMBER AND TITLE 0604640A Advanced Command and Control Vehicle	ाग∟E dvanced	Сотта	nd and C	ontrol	ξ Ö	PROJECT DG27
FY 1997 Planned 1549 1085 1245 Total 7734	 FY 1997 Planned Program: (continued) 1549 Continue Live Fire Testing 1085 Direct Support Electrical System Test Set/Advanced Collective Integrated Protective System Development/Procurement 1245 Project Management 174 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 	dvanced Co	ollective Inte	egrated Prote	ctive System R/STTR) Pro	1 Developme	ent/Procuren	nent		
FY 1998 Planned Program • 1804 Comple • 2602 Comple • 4418 Comple • 43 Project Total 8867	Program Complete Contractor Test Support; Perform Refurbishment/Rework of Test Vehicles Complete Live Fire Testing Complete Production Verification Testing Project Management	Refurbishm	ent/Rework	of Test Vehi	icles					
FY 1999 Planned	FY 1999 Planned Program: Project not funded in FY 99									
B. Project Change Summary FY 1997 President's Budget Appropriated Value	je Summary 's Budget ie	FY 1996 17739 18238	FY	F <u>Y 1997</u> 6649 7734	FY 1998 6759	FY 1999 0	Øl 0			
Adjustments to Appropriated Value FY1998 President's Budget Request	propriated Value 's Budget Request	-932 17306		7734	8867		0			
Change Summary Explanation: Funding: 1085 increass Funding: 2108 increass	Summary Explanation: Funding: 1085 increase in FY 97 applied to DSESTS/ACIPS. Funding: 2108 increase in FY 98 due to realignment from WTCV to complete Live Fire testing.	IPS. a WTCV to	complete L	ive Fire testir	ng.					
C. Other Program	C. Other Program Funding Summary RV 1006	FV 1007	EV 1009	FV 1000	EV 2000	EV 2001	EV 2003	EV 2003	To	Total
GA84200 Command & Contr GE0173 Spares (Initial) C2V	ol Vehicle	48939	30897 941	62681	100013	122929	86755	123902	Cont.	Cont.
Project DG27			Page 2 of 4 Pages	4 Pages			Exhibi	Exhibit R-2 (PE 0604640A)	04640A)	
			7.65							Item 76



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ITEM JU	STIFICA	AION	SHEET ((R-2 Ex	hibit)			DATE Fe	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	y Developr	nent		PE NUMBER AND TITLE 0604640A Advanced Command and Control Vehicle	ю тітсе Advan c	ed Co	mmand	and Cc	ontrol		PROJECT DG27
D. Schedule Profile	FY 1996)6 3 4		FY 1997 2 3	4	-	FY 1998 2 3	4		FY 1999 2 3	4
Deliver Pre-Production Vehicles Begin Live Fire Testing LRIP IPR Award LRIP Contracts Complete Developmental/Technical Tests Support to Task Force XXI Complete Production Verification Test Complete Live Fire Testing * Milestone Completed	R	*	*	××				××		•	
Project DG27			Page	Page 3 of 4 Pages				ж. Xhibit	R-2 (PE	Exhibit R-2 (PE 0604640A)	
			c 	737							Item 76

RDT&E PROGRAM ELEMENT/PROJEC	ROJECT COST BREAKDOWN (R-3)	REAKDO	JWN (R-:	3)	DATE Fe	February 1997	16
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AN 0604640A Vehicle	PE NUMBER AND TITLE 0604640A Advan Vehicle	ced Com	D TITLE Advanced Command and Control	Control	d ()	РВОЈЕСТ DG27
A. Project Cost Breakdown Design Engineering Prototype Manufacture Test Project Management SBIR/STTR Total	FY 1996 11416 961 2775 2154 17306	FY 1997 3119 775 2421 1245 174 7734	EY 1998 1804 7020 43 8867	FY 1999			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Project Performing or Funding Obligation Activity Office Activity Vehicle Date EAC EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total
United Defense LP 63914 65718 Other Contracts 18046 19131	50528	10577 1800	2809 1085	1804			65718
Support and Management Organizations TACOM CECOM US Army Europe SBIR/STTR	3343 4059 2481	1300	945 300 174	23 20			5611 5233 2481 174
Test and Evaluation Organizations APG, YPG, White Sands Government Furnished Property: None	1370	2775	2421	7020			13586
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	66774 9883 1370 78027	12377 2154 2775 17306	3894 1419 2421 7734	1804 43 7020 8867			84849 13499 13586 111934
Project DG27	Page 4 of 4 Pages 738	Ses		Exhil	Exhibit R-3 (PE 0604640A)	0604640A)	Item 76



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	k-2 Exhil	bit)		DATE FeI	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NI 0 0 0	PE NUMBER AND TITLE 0604641A Tacti	E NUMBER AND TITLE 0604641A Tactical Unmanned Ground Vehicle	nmanne	d Ground	i Vehicle	_	PROJECT DE47
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DE47 Tactical Unmanned Ground Vehicle (TUGV)	0	2823	2687	2663	2656	2641	0	0	0	13470

not a new start, was previously funded by OSD PE 0603709D. PE supports research efforts in the engineering, manufacturing and design phase of the acquisition cycle and (TUGV) provides the commanders the ability to see the battlespace while at the same time reducing soldiers' exposure during dangerous reconnaissance, surveillance, target A. Mission Description and Budget Item Justification: The Army has the lead for this joint service program. The development of a Tactical Unmanned Ground Vehicle acquisition (RSTA) and nuclear biological and chemical (NBC) detection missions. Performs as a force multiplier, eliminates trickle-down combat information, reduces the intelligence food chain. Six unmanned systems per battalion, operating out front, provide a force multiplication capability where TUGV's report the nature of the terrain, user appraisals, packaged and readied for incorporation into the TUGV Engineering and Manufacturing Development (EMD) performance specifications. This project is (DARPA) developed technologies to the Project Manager (PM) Unmanned Ground Vehicles so that they can be assessed (maturity, supportability, operationally) during find the enemy, locate obstacles, acquire targets, detect chemical vapors, and provide this information directly to those who need it the most--the battalion commander's battle staff. This project is OSD funded through Milestone II (3rd Qtr FY 98). This PE supports the critical transition of Defense Advance Research Project Agency "fog-of-war" and fills the brigade intelligence gap. Most importantly, the TUGV will displace brigade and battalion commanders from the bottom of the combat is therefore placed in Budget Activity 5.

Acquisition Strategy: The Joint Project Office is following a disciplined Evolutionary Acquisition strategy. This strategy requires horizontal technology integration (HTI) specifications and detailed analysis to demonstrate Milestone (MS) I exit criteria and facilitate Cost and Operational Effectiveness Analysis (COEA) studies. The program of emerging sensors, lasers, and command and control data link technologies so that the first generation TUGV will enable soldiers to perform dangerous RSTA, NBC detection, and targeting missions from remote and safer locations. This program differs from traditional acquisition programs by incorporating an in-house Program utilizes a TUGV Integrating Integrated Product Team (IIPT) approach. A full and open competition will be conducted at MS II to select a system prime contractor. communications, mission planning, and off-road navigation technologies. This program definition and risk reduction phase will produce a system and interface Definition and Risk Reduction phase. Prototype systems are being built during this phase using state-of-the-art sensors, controlling actuators, low bandwidth

FY 1996 Accomplishments: Project funded in FY 1996 under OSD PE 0603709D.

FY 1997 Planned Program:

- Transfer mature technologies from DARPA Demonstration (Demo) II Program [off-road and way point navigation, low bandwidth teleoperation and mission planning, and long-range Thermal Weapon Site (TWS)]. Integrate and demonstrate HTI of critical sensor technologies from both Demo II and other Program Managers. Support user appraisal activities with the US Army Infantry School, Ft. Benning, GA.
 - Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) 69 2823

Total 2823
Project DE47

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Exhibit R-2 (PE 0604641A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICATI	ON SH	EET (R	-2 Exhit	oit)		DATE Feb	February 19	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopme	ent	PE NUI 0604	PE NUMBER AND TITLE 0604641A Tacti	тге actical U	ਮπ∟E Tactical Unmanned Ground Vehicle	l Ground	Vehicle		РRОЈЕСТ DE47
 FY 1998 Planned Program: 2687 Complete transfer of mature technologies from DARPA Demo II Program (off-road and way point navigation, low bandwidth teleoperation and mission planning, and long-range TWS). Integrate and demonstrate HTI of critical sensor technologies from both Demo II and other PMs. Total 2687 	echnologies fi mge TWS).	om DARPA Integrate and	Demo II Pr demonstrat	ogram (off-i e HTI of cri	road and wa	y point navig technologies	gation, low l from both	oandwidth tel Demo II and	leoperation other PMs.	and
 FY 1999 Planned Program: 2663 In compliance with Evolutionary Acquisition Strategy, identify and transition technological enhancement candidates from DARPA into TUGV EMD design. Total 2663 	ary Acquisitic	on Strategy, ic	lentify and	transition te	chnological	enhancemen	ıt candidates	from DARI	PA into TU	3V EMD
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 BES/Pres Bud Request		FY 1996 0 0 0	FY 1997 2884 2823 2823 2823	199 <u>7</u> 2884 2823 0 2823	FY 1998 2886 0 0 2687	FY 1999 2877 0 0 2663	99 77 0 0 53			
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
OSD funding in PE 0603709D.		10363	11974	13079	13687	14806	10283			iso)
D. Schedule Profile	FY 1996	4	FY 2	FY 1997	1	FY 1998	8 r 4	1 7	FY 1999	٧
Milestone I Decision Approved Joint ORD Begin Developmental Testing Initiate User Appraisals Critical Tech Tr - Contract Award Develop Draft EMD RFP Release EMD RFP Initiate EMD Source Selection Initiate Milestone II Documentation Complete Phase I User Appraisal EMD MS II Decision	* * * *	*	* * *	×	· ××			•		-
Project DE47			Page 2 of 4 Pages	Pages			Exhibi	Exhibit R-2 (PE 0604641A)	304641A)	





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604641A Tactical Unmanned Ground Vehicle	PROJECT DE47
D. Schedule Profile	FY 1997 FY 1998 7 7 3 4 1 2 3 4	FY 1999
n		· ×
*Denotes completed effort		
Project DE47	Page 3 of 4 Pages Exhib	Exhibit R-2 (PE 0604641A)
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT CO	ST BRE	AKDO	WN (R-3	(E)	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE 1	PE NUMBER AND TITLE 0604641A Tact	D TITLE Tactic a	ıl Unmanı	ਮਸ⊓E Tactical Unmanned Ground Vehicle	nd Vehicle		РRОЈЕСТ DE47
 A. Project Cost Breakdown DARPA Technology transfer, integration, assessment & HTI SBIR/STTR Total 	FY 1996	FY 1997 2754 69 2823		FY 1998 2687 2687	FY 1999 2663 2663			
B. Budget Acquisition History and Planning Information								
Award or Performing Obligation Activity Date EAC	Project Office Pri EAC FY	Total Prior to FY 1996 F	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Lockheed Martin CPFF Jan 97				2370	2301	2286	Cont	1269
Support and Management Organizations MICOM RDEC MOA Oct 96 RSA AI				384	386	377	Cont	1147
Test and Evaluation Organizations: SBIR/STTR				69				69
Government Furnished Property: N/A								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation				2370 384 69	2301 386	2286 377		6957 1147 69
Total Project				2823	2687	2663		8173
Project DE47	Page 4 c	Page 4 of 4 Pages			EXP	Exhibit R-3 (PE 0604641A)	0604641A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	االاع	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	evelopm	ent	PE NI 060	PE NUMBER AND TITLE 0604642A Ligh!	PENUMBER AND TITLE 0604642A Light Tactical Wheeled Vehicle	ical Whe	eled Veh	icle		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	3970	2937	6066	39919	896	1766	0	0	59397	59397
DE40 Hi Mob Multi-Purp Whld Veh (HMMWV) Prototype	0	2937	6066	39919	896	1766	0	0	55427	55427
DE41 Armored Security Vehicle (ASV)	3970	0	0	0	0	0	0	0	3970	3970

(HMMWV), HMMWV Extended Service Program (ESP), Commercial Utility Cargo Vehicle (CUCV) and the Armored Security Vehicle (ASV). In FY 1996 Project DE41 funds the Armored Security Vehicle (ASV) and HMMWV Extended Service Program (ESP). Beginning in FY 1997, Project DE40 funds the RDT&E effort for development of the remanufacture program as well as the next generation HMMWV leading to procurement in FY 2000. The next generation HMMWV represents a new start in FY 1998. This Program Element supports research efforts in the engineering and manufacturing development phases of the acquisition strategy and is therefore Mission Description and Budget Item Justification: This PE supports all Light Tactical Wheeled Vehicles such as the High Mobility Multi-purpose Wheeled Vehicle correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604642A)

RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	FION SE	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY			PE N	PE NUMBER AND TITLE	IITLE				Ы	PROJECT
5 - Engineering and Manufacturing Development	evelopm	ent	090	4642A L	ight Tact	tical Whe	0604642A Light Tactical Wheeled Vehicle	icle		DE40
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DE40 Hi Mob Multi-Purp Whld Veh (HMMWVV) Prototype	0	2937	6066	39919	896	1766	0	0	55427	55427

Ambulance and Shelter Carrier. This Program Element supports research efforts in the engineering and manufacturing development phases of the acquisition strategy and is Personnel Carrier, TOW Anti-tank Carrier, Armament Carrier, Shelter Carrier and Ambulance, new missions and threats have generated the need to increase payload and include full roll-over protection in accordance with Federal Motor Vehicle Safety Standards (FMVSS) for off-road construction equipment. The HMMWV consists of a A. Mission Description and Budget Item Justification: The HMMWV is a lightweight, high performance, four-wheel drive, air transportable and air droppable, high protection levels for the HMMWV. The new HMMWV's will have reduced vehicle width which will permit the vehicle to be loaded into the CH-53, as well as operate mobility tactical family of wheeled vehicles. The HMMWV continued production is required to support expanding mission roles. In addition to the continued roles of better in Third World environments on narrow streets. The HMMWV will comply with all Federal and European Community safety and environmental standards, to single chassis that can be adapted to any one of four models at Direct Support (DS) or General Support (GS) level. The four models include: Cargo/Utility, Armor, therefore correctly placed in Budget Activity 5.

Acquisition Strategy: The acquisition strategy for the development phase of the HMMWV is to award one prototype contract, which will lead to a non-competitive award of a five-year multi-year production contract in FY 2000.

FY 1996 Accomplishments: In FY 1996 Project DE41 funds the Armored Security Vehicle (ASV) and HMMWV Extended Service Program (ESP).

FY 1997 Planned Program:

- Service Support Contract
- Support Costs (Engineering/Quality/Matrix) 260
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs

2937

FY 1998 Planned Program:

- Prototype Contract (HMMWV II) 2000
- Prototype Contract (ReMan HMMWV) 2600
 - Source Selection Evaluation 1000
- Support Costs (Engineering/Quality/Matrix) 1309

Project DE40

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Exhibit R-2 (PE 0604642A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	LSUL M	TFICAT	HS NOI	EET (R	-2 Exhil	bit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopme	nt	PE NU 0 00	PE NUMBER AND TITLE 0604642A Ligh	ार∟ह ight Tact	ਹ ਸਾਸ∟ Light Tactical Wheeled Vehicle	ed Veh	iicle	ă O	РРОЈЕСТ DE40
FY 1999 Planned Program: • . 16271 Prototype Contract (HMMWV II) • 3100 Prototype Contract (ReMan HMMWV) • 5700 Technical Data • 7533 Support Costs (Engineering/Quality/Matrix) • 7315 Developmental Testing Total 39919	II) AMWV) aality/Matrix)									
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996	FY	F <u>Y 1997</u> 2937	FY 1998	FY 1999	6			
Adjustments to Appropriated value FY 1998 Pres Bud Request			. 1	2937	6066	39919	6			
Change Summary Explanation: Funding: FY97 (+ 2937) Congressional increase FY98 (+9909) and FY99 (+39919) restructure	ructure	o support ne	ext generatic	to support next generation HMMWV.	.'					
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
OPA1 HMMWV (D15400) OPA1 HMMWV ESP (DV0230)	124959	162691	66233	14124 49890	120494 85195	114498 89863	129019 31710	234510 31793	Cont	Cont
D. Schedule Profile	FY 1996	<u>.</u>	FY	FY 1997		FY 1998	~ ~	<u>-</u> Н с	FY 1999	~
Source Selection Evaluation (RDT&E) Award RDT&E Contract Integrated Testing		t	•	n	- ×					t
Project DE40			Page 3 of 7 Pages	7 Pages			Exhibi	Exhibit R-2 (PE 0604642A)	304642A)	
			44.0							Item 78

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RDT&E PROGRAM ELEMENT/PROJE	CT COS	ROJECT COST BREAKDOWN (R-3)	OWN (R-:	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE N 06	PE NUMBER AND TITLE 0604642A Light	ागा∈ Light Tactical Wheeled Vehicle	/heeled Ve]]	a D	PROJECT DE40
A. Project Cost Breakdown Product Development Developmental Testing SBIR/STTR Total	FY 1996	FY 1997 2865 72 2937	FY 1998 9909 0 9909	EY 1999 32604 7315 39919			
lanning Information Award or Performing Obligation Activity EAC	Project T	Total Prior to FY 1996 FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations Contractor TBD CPFF SSEB TACOM,				7600	19371	150	27121 1000
MI In-House/Eng			260	1309	7533	1012	10114
TACOM, MI AM General,			2605				2605
System Tech Spt Technical Data					5700	1500	7200
Pkg Contract TBD SBIR/STTR			72				72
Support and Management Organizations N/A Test and Evaluation Organizations TECOM (APG) Government Furnished Property - None					7315		7315
Subtotal Product Development			2937	6066	32604	2662	48112
Subtotal Support and Management Subtotal Test and Evaluation Total Project			2937	6066	7315 39919	2662	7315
Project DE40	Page 4 o	Page 4 of 7 Pages		Exh	Exhibit R-3 (PE 0604642A)	0604642A)	
	746	9					Item 78



RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE N	E NUMBER AND TITLE 3604642A Light	e NUMBER AND TITLE 0604642A Light Tactical Wheeled Vehicle	tical Whe	eled Veh	icle	.	PROJECT DE41
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DE41 Armored Security Vehicle (ASV)	3970	0	0	0	0	0	0	0	3970	3970

A. Mission Description and Budget Item Justification: The Armored Security Vehicle (ASV) is a turreted, lightly armored all-wheel drive combat support vehicle which requirements and extend the service life of the vehicle another 14 years. This Program Element supports research efforts in the engineering and manufacturing development need for such a wheeled vehicle was highlighted by recent humanitarian missions such as Operation Restore Hope in Somalia and the conflict in Bosnia. There is no other will provide essential protection to selected Military Police units in highly exposed threat environments. The Military Police (MP) currently use the High Mobility Multi-Extended Service Program (ESP). The Program Executive Office, Tactical Wheeled Vehicles initiated the Joint Army/Marine Corps HMMWV ESP program in FY 1995. Purpose Wheeled Vehicle (HMMWV). The ASV is required to provide improved ballistic protection and to increase payload and NBC protection to the MP teams. The under PE 0604328D to insure all Services' needs were met. A joint service memorandum is in place. In FY 1996, Project DE41 also includes funding for the HMMWV comparable system in the inventory which offers the ballistic protection, transportability and mobility of the ASV. Congress directed FY 1995 funding for this program FY 1996 funding will continue this previous effort, thus enabling procurement of vehicles with updated design, which will allow insertion of evolving performance phases of the acquisition strategy and is therefore correctly placed in Budget Activity 5.

Acquisition Strategy: The acquisition strategy for ASV awarded one prototype contract (Dec 95), which leads to a non-competitive award of a four-year production contract in FY 1997. The acquisition strategy for the HMMWV ESP is to develop a remanufacture package.

FY 1996 Accomplishments:

- Prototype Contract (ASV)
- Government Engineering/Quality Support (ASV) 624
- Pre-Production Qualification Test (PPQT) (ASV) 294
 - Initiate Remanufacture Package (HMMWV ESP) 1446 3970

FY 1997 Planned Program: Program not funded in FY 97

FY 1998 Planned Program: Program not funded in FY 98

FY 1999 Planned Program: Program not funded in FY 99

Project DE41

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Exhibit R-2 (PE 0604642A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUST	IFICATIC	ON SHE	ET (R-	2 Exhik	it)		DATE Fe	February 1997	7(
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developmer	ıt	PE NUME 06046	PE NUMBER AND TITLE 0604642A Ligh	тге g ht Tact i	PE NUMBER AND TITLE 0604642A Light Tactical Wheeled Vehicle	led Veh	icle	# O	PROJECT DE41
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request		FY 1996 4073 4187 -217 3970	FY 1997		FY 1998	FY 1999	6			
C. Other Program Funding Summary OPA1 Armored Security Vehicle (D02800)	FY 1996	FY 1997 F	FY 1998 F	FY 1999 8877	FY 2000 7052	FY 2001	FY 2002	FY 2003	To Compl	Total Cost 43629
D. Schedule Profile Initiate Remanufacture Package (HMMWV ESP) PPQT Testing (ASV) Release Production Request For Proposal (ASV) Production Contract Award (ASV) *Milestone Complete	FY 1996 2 3	4 *X	FY 1997 X X		4 ×	FY 1998 2 3	8 £	-	FY 1999 2 3	4
Project DE41		Ь	Page 6 of 7 Pages	ages			Exhibi	t R-2 (PE (Exhibit R-2 (PE 0604642A)	
			748							Item 78



RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT C	OST BF	EAKDC	WN (R-	3)	DATE Fe	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604642A Ligh	AND TITLE A Light	actical M	PE NUMBER AND TITLE 0604642A Light Tactical Wheeled Vehicle	shicle	L	PROJECT DE41
A. Project Cost Breakdown Product Development Developmental Testing Total	FY 1996 3676 294 3970	FY 1997	<u> 766</u>	FY 1998	FY 1999	ē.		
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Development Organizations ON (ASV FFP Dec 95			1606				•	1606
			624					624
TACOM, MI AM General			1446					1446
HMMWV ESP Support and Management Organizations								
Test and Evaluation Organizations TECOM (APG) Government Furnished Property - None		,	294					294
Subtotal Product Development		Total Prior to FY 1996	FY 1996 3676	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program 3676
Subtotal Support and Management Subtotal Test and Evaluation Total Project			294 3970					294 3970
Project DE41	. Pag	Page 7 of 7 Pages	5		Exh	Exhibit R-3 (PE 0604642A)	0604642A)	
		749						Item 78

RDT&E BUDGET ITEM JUST	SUL ME		TION SI	HEET (R	IIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development)evelopm	ent	PE NI 060	PE NUMBER AND TITLE 0604645A Armo	TITLE Armored	PENUMBER AND TITLE 0604645A Armored Systems Modernization (ASM)	Moderni	zation (A	SM)	
			-E	ngineerin	- Engineering Development	pment				
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	32425	6585	0	0	0	0	0	33338	Continuing	Continuing
D022 Future Scout Vehicle (FSV)	0	0	0	0	0	0	0	33338	Continuing	Continuing
D175 Advanced Field Artillery System Multi-Option Fuze	6058	6585	0	0	0	0	0	0	0	36159
D413 Armored Gun System (AGS)	26367	0	0	0	0	0	0	0	0	269476

Artillery System (AFAS) Multi-Option Fuze for Artillery (MOFA), Armored Gun System (AGS) and the Future Scout Vehicle (FSV). MOFA will provide proximity, time delay and point detonation functions for 105mm and 155mm bursting projectiles. The AGS is a strategically deployable, tactically transportable, lightly armored, highly program element support research efforts in the Engineering and Manufacturing Development phase of the acquisition cycle and are therefore correctly placed in Budget Mission Description and Budget Item Justification: This program element supports the Engineering and Manufacturing Development efforts for the Advanced Field mobile, direct fire weapon system. The FSV will replace the current ground scout systems in the battalion/brigade and division/regiment levels. The projects in this Activity 5.

Page 1 of 9 Pages

Exhibit R-2 (PE 0604645A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION S	HEET (R	१-2 Exhi	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developm	ent	PE N 060	PE NUMBER AND TITLE 0604645A Armored Systems Modernization (ASM) - Engineering Development	TITLE \rmored \text{\text{ig Develo}}	Systems pment	Moderni	zation (A		РКОЈЕСТ D175
COST (in Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D175 Advanced Field Artillery System Multi-Option Fuze	6058	6585	0	0	0	0	0	0	0	36159

components. This project finances the Engineering and Manufacturing Development phase of MOFA. MOFA will provide proximity, delay, time and point detonation functions for 105mm and 155mm bursting projectiles. MOFA will be inductively (or manually) set contributing to Crusader's critical automated ammunition handling A. Mission Description and Justification: Crusader is the Army's next generation 155mm self-propelled howitzer system that will provide a significant increase in artillery survivability, mobility and operational capability and effectiveness through utilization and integration of advanced technology in its subsystems and combat capability, allowing Crusader to meet rate of fire (10-12 rounds/min) and autonomous operations requirements.

FY 1996 Accomplishments:

- Final hardware design, integration and build
- Program management, management engineering services
- Qualification testing/development and operational testing

FY 1997 Planned Program:

- Design enhancements and updates, production readiness review
- Program management, management engineering services
- Continuation of Developmental and Operational testing, completion of qualification testing and type classification testing 750 1598
 - Small Business Innovation Research /Small Business Technology Transfer (SBIR/STTR) Programs 161

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program: Project not funded in FY 99

Project D175

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Exhibit R-2 (PE 0604645A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUSTIF	-ICATIO	N SHE	EET (R-	2 Exhik	oit)		DATE Fe l	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopment		PE NUM 0604(- Eng	PE NUMBER AND TITLE 0604645A Armo - Engineering D	oe number and title 0604645A Armored System - Engineering Development	PE NUMBER AND TITLE 0604645A Armored Systems Modernization (ASM) - Engineering Development	Moderniz	zation (A		РРОЈЕСТ D175
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request		FY 1996 6215 6388 -330 6058	EY 1997 6726 6585 6585		FY 1998 0 0	FY 1999 0	0 0 0			
C. Other Program Funding Summary RDTE, A Budget Activity 4 PE 603645, Project	FY 1996 FY 135724	FY 1997 FY	FY 1998 I	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Comp	Total Cos 546347
Ammo, A Appropriation ER8017 MOFA Production RDTE, A Budget Activity 4 PE 603854, Project D505 Crusader - AD	2	235795 32	322291	6056	30890	59040	59950	61192	119200	336328
D. Schedule Profile Acquisition Milestones (AM) AM - Hardware Delivery (PPQT) T&E Milestones - Pre-Production Qualification Test (PPQT) T&E Milestones - Baseline Design Testing Contract Completion (Task V) Type Classification I * Milestone completed	FY 1996 2 3 X*	4	FY X X X	FY 1997 2 3 3 X X X X X X	4 ×	FY 1998 2 3	δ. ε. 4	-	FY 1999 2 3	4
Project D175		Paş	Page 3 of 9 Pages	sage _c			Exhibit	Exhibit R-2 (PE 0604645A))604645A)	, i

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RDT&	E PROG	RDT&E PROGRAM ELEMENT/	EMENT/PRO	PROJECT C	SOST B	REAKDO	COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	and Manu	facturing I	Development		PE NUMBER AND TITLE 0604645A Armo	RAND TITLE 5A Armol sering De	ENUMBER AND TITLE 604645A Armored System Engineering Development	PE NUMBER AND TITLE 0604645A Armored Systems Modernization (ASM) - Engineering Development	nization (/		РКОЈЕСТ D175
A. Project Cost Breakdown Product Development Support and Management Test and Evaluation SBIR/STTR Total	kdown ent			FX 1996 4980 568 510 6058	FY	FY 1997 4076 750 1598 161 6585	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information	History and	Planning Inf	<u>ormation</u>								
Performing Organizations Contractor or Contra Government Metho Performing or Fun Activity	ations Contract Method/Type or Funding	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
lopmen ys	it Organizatioi CPIF	ns May 92	20233	20331	14023	2766	2500			0	19389
M.N FI Joint	SS-CPFF	Mar 94			1788					0	1788
Ventures, Twesbury, MA AMCCOM,					4412	2214	1415			0	8102
NJ; Adelphi, MD SBIR/STTR							161				
Support and Management Organizations AMCCOM,	nent Organiz	cations			2347	268	750			0	3665
NJ; Adelphi, MD Test and Evaluation Organizations TECOM, Yuma, AZ, APG, ARL, ARDC, HAFB)rganizations				946	510	1598			0	3054
Project D175				Pag	Page 4 of 9 Pages	es		Exhi	Exhibit R-3 (PE 0604645A)	0604645A)	i i
					753						Item 79

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BRE	AKDO	WN (R-3		DATE Fe	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604645A Armored Systems Modernization (ASM) - Engineering Development	Armore	d System slopment	s Moderr	nization (РРОЈЕСТ D175
Government Furnished Property: None							
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to EY 1996 20223 2347 946 23516	FY 1996 4980 568 510 6058	FY 1997 4076 750 1598 6585	FY 1998	FY 1999	Budget to <u>Complete</u>	Total <u>Program</u>
				. .			
Project D175	Page 5 of 9 Pages			EXU	101 K-3 (PE	EXHIBIT K-3 (PE UBU4045A)	Item 79
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	ION SI	HEET (F	8-2 Exhi	bit)		DATE Fe l	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developm	ent	PE N 06(PE NUMBER AND TITLE 0604645A Arm - Engineering D	PENUMBER AND TITLE 0604645A Armored System - Engineering Development	PE NUMBER AND TITLE 0604645A Armored Systems Modernization (ASM) - Engineering Development	Moderni	zation (A		РРОЈЕСТ D413
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D413 Armored Gun System (AGS)	26367	0	0	0	0	0	0	0	0	269476
A. Mission Description and Justification. The Armored Gun System (AGS) is a strategically deployable, tactically transportable, lightly armored, highly mobile, direct fire weapon system. The AGS will support light infantry forces in offensive and defensive operations, low and mid intensity conflicts. The AGS will be employed during contingency force operations; therefore it must be capable of insertion via low velocity air drop (LVAD) and execute forced entry operations. Its role is to support infantry units in direct fire mode for point fire target destruction, generally against bunkers, threat medium armor systems, buildings, and in Military Operations in Urban Terrain. System capabilities include C-130 LVAD (Level I Armor), Roll-on/Roll-off C130/C141 (Level II Armor), Roll-on/Roll-off C130/C141 (Level III armor greater than the M551 Sheridan. The Army terminated the AGS program because of changing Research Development and Acquisition (RDA) priorities and budgetary pressures.	Armored Gun fantry forces capable of institution, generall Armor), Roll-equivalent to but and Acqui	System (AG in offensive ertion via lov y against bu on/Roll-off M1 and mob	S) is a strate and defensi v velocity a chers, threa C130/C141 llity with Le	egically depl ive operation in drop (LV ¹ t medium an (Level II Ar evel III armo ind budgetar	oyable, tactic s, low and m AD) and exec mor systems, mor), Roll-o, r greater than	cally transportic intensity controlled intensity controlled every buildings, and n/Roll-off Controlled in the M551 S	table, lightl onflicts. Th onf in Milita of in Milita 17 (Level II) heridan. Th	y armored, he AGS will ons. Its role ry Operation II Armor), 10 te Army terr	nighly mobi be employe is to suppo is in Urban 05mm mair minated the	le, direct d during t infantry Ferrain. gun AGS
Acquisition Strategy: The AGS program was terminated. The	ninated. The	funding in F	Y 1996 wil	l be used for	an orderly ci	funding in FY 1996 will be used for an orderly close-out of the program.	e program.			
FY 1996 Planned Program:	etion									
FY 1997 Planned Program: Project not funded in FY 97	ı FY 97									
FY 1998 Planned Program: Project not funded in FY 98	FY 98									
FY 1999 Planned Program: Project not funded in FY 99	FY 99									
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 32758 33677		FY 1997 0	FY 1998 0	FY 1999 0	610			
Adjustments to Appropriated Value FY 1998 President's Budget Request		-7310 26367		0	0		0			
Project D413			Page 6 of 9 Pages	9 Pages			Exhibi	Exhibit R-2 (PE 0604645A)	604645A)	
			755							Item 79

Project D413 Proj	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ATION SHEET (R-2 Exhibit)	DATE February 1997	ry 1997
96 (-7310) funds were reprogrammed to higher priority programs. FY 1996 FY 1997 FY 1998 FY 1999 X** 3 4 1 2 3 4 1 2 3 3 X** X** X** FY 1998 FY 1999 FY 19	BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604645A Armored System - Engineering Development	ıs Modernization (ASM)	
FY 1996 FY 1997 FY 1998 FY 1999 FY 199	Change Summary Explanation: Funding: In FY 96 (-7310) funds were re	programmed to higher priority programs.		
Testing I $\frac{1}{X}$ 4 I $\frac{2}{3}$ 4 I $\frac{1}{2}$ 3 4 I $\frac{2}{3}$ 3 5 FY 1999 F	C. Other Program Funding Summary: None			
Testing X* 3 4 1 2 3 4 1 2 3 4 1 2 3 3	FY 1996	FY 1997	,	
Page 7 of 9 Pages Exhibit R.2 (PE 0604645A)	X* X	2 3 4 1	4	
Page 7 of 9 Pages Exhibit R-2 (PE 0604645A)	* Milestone Completed			
Page 7 of 9 Pages Exhibit R-2 (PE 0604645A)				
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Page 7 of 9 Pages Exhibit R-2 (PE 0604645A)				
	Project D413	Pase 7 of 9 Pases	Exhibit R-2 (PE 060464)	154)
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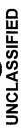


RDT&E PROGRAM ELEMENT/	RAM EL	EMENT/PR	OJECT	COST B	REAKD(PROJECT COST BREAKDOWN (R-3)	3)	DATE F	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	facturing [Development		PE NUMBEF 060464! - Engin	PE NUMBER AND TITLE 0604645A Armo - Engineering De	PE NUMBER AND TITLE 0604645A Armored Systems Modernization (ASM) - Engineering Development	ns Moderı t	nization (PROJECT D413
 A. Project Cost Breakdown Prototype Design, Mfg & Support XM35 Gun Design, Mfg, & Support Government Testing Training Devices Program Management Other Govt Support EMD Termination Total B. Budget Acquisition History and Planning Information 	Planning Inf	ormation	EY 1996 6132 1105 823 50 3225 181 14851 26367		FY 1997	FY 1998	FY 1999			
g Organiza or t	Award or	Performing	Project	Total						ŀ
Performing Or Funding Activity Vehicle I Product Development Organizations	Obligation <u>Date</u> IS	Activity <u>EAC</u>	Office EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
United Defense LP SS/CPIF San Jose, CA	Jun 92	TBD	215472	190969	19254				0	210223
SAAB Tng Sys FFP Huskvarna, Swed	Sep 94	4605	4605	4605					0	4605
Misc Govt Agcy MIPR Sunnort and Management Organizations	ations			10207	2174				0	12381
PM AGS Warren, MIPR				7884	3225				0	11109
Miscellaneous MIPR Test and Evaluation Organizations				1955	181				0	2136
ATC APG, MD MIPR Misc Govt Agcy MIPR				8487 2471	699 124				0	9186
Project D413			Pas	Page 8 of 9 Pages	88		Exhi	Exhibit R-3 (PE 0604645A)	0604645A)	
				757						Item 79

RDT&E PRC	GRAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	T COST BI	REAKDO	JWN (R-	€	DATE Fe	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	nufacturing	Development	PE NUMBER AND TITLE 0604645A Armc - Engineering D	AND TITLE A Armor ering Dev	PE NUMBER AND TITLE 0604645A Armored Systems Modernization (ASM) - Engineering Development	ns Moderi t	nization (PROJECT D413
Government Furnished Property: Contract Method/Type Item or Funding Description Vehicle	y: pe Award or Obligation <u>Date</u>	Delivery <u>Date</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 199 <u>9</u>	Budget to <u>Complete</u>	Total Program
XM35 Gun MIPR	Aug 91	Nov 92	11068					0	11068
Support and management Froperty XM35 Gun MIPR Test and Evaluation Property	er ty		3112	480				0	3592
XM35 Gun MIPR			2351	230				0	2581
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Ħ		216849 12951 13309 243109	21428 3886 1053 26367					238277 16837 14362 269476
Project D413			Page 9 of 9 Pages	SZ		Exhi	Exhibit R-3 (PE 0604645A)	0604645A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (R	R-2 Exhi	bit)		DATE FeI	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Jevelopm	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604649A Engi Development	PE NUMBER AND TITLE 0604649A Engineer Mobility Equipment Development	Mobility	Equipme	ınt		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	19114	46705	56196	63069	58914	39210	19294	0	0	343859
DG15 TRACTOR CARD	219	0	415	1492	0	0	0	0	0	2126
DG25 M1 Breacher	6501	34102	43748	51420	58745	39210	19294	0	0	253020
DG26 Heavy Assault Bridge	12394	12603	12033	10157	169	0	0	0	0	88674

mobility characteristics comparable to the maneuver forces supported. Two programs are included in the PE: the Grizzly (M1 Breacher) and the Wolverine (Heavy Assault control, a power driven excavating arm, and an armored commander's control station on the chassis. The Wolverine will integrate a bridge capable of supporting Military Bridge). The base for both vehicles is an M1 Abrams Tank chassis. The Grizzly will integrate a versatile/survivable full-width mine clearing blade with automatic depth Mission Description and Budget Item Justification: This Program Element (PE) supports the development of new, advanced combat engineer systems that will have Load Class (MLC) 70 loads and a software controlled launching mechanism. All projects in this PE support efforts in the Engineering and Manufacturing Development (EMD) phase of the life cycle acquisition strategy, and are correctly located in Budget Activity 5.

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Exhibit R-2 (PE 0604649A)

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA.	TION SE	FIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE Fel	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604649A Engineer Mobility Equipment Development	rı⊤∟E :ngineer l nt	Mobility	Equipme	ī	a u	PROJECT DG25
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DG25 M1 Breacher	6501	. 34102	43748	51420	58745	39210	19294	0	0	253020

capable of moving with, and be as survivable as, the force it is supporting. It will provide the maneuver force with the freedom required to successfully execute assigned crew/vehicle survivability while clearing minefields and removing complex natural and man-made obstacles at the forward edge of the battlefield. The Grizzly will be A. Mission Description and Justification: The Grizzly (M1 Breacher) will provide the Combat Engineer with significantly improved mission effectiveness and ground combat mission requirements. Funding in this phase will support vehicle system technical evolution to meet operational requirements prior to production, production planning, and government testing prior to a Milestone III decision; and in addition, will support the development of Grizzly training devices.

the vehicle will be sole sourced to United Defense Limited Partnership (UDLP), Ground Systems Division, York, PA. The contracts for training devices development and components/systems necessary to insure that the Grizzly will meet the mission profile required by the Operational Requirements Document. Through the production buy Acquisition Strategy: Research and development efforts have leveraged the accomplishments of the Combat Mobility Vehicle Advanced Technology Transition Demonstrator (CMV-ATTD) contract. Design modifications have been written into the Advanced Development contract for the powertrain and other chassis production will be awarded by STRICOM with maximum use on existing commercial off-the-shelf hardware and software.

FY 1996 Accomplishments:

- 815 Prepared Grizzly EMD Contract
- Provided Government and Contractor Program Management and Systems Engineering 1205
 - 4481 Conducted EMD Design Refinement and Logistics Development Efforts
 - Total 6501

FY 1997 Planned Program:

- 22760 Perform Design Refinement and Prototype Refurbishment
- 4271 Conduct Logistics Analysis, Component Testing and Simulation
- Provide Government and Contractor Program Management and Systems Engineering to Include Integrated Process Teams, Product Assurance, 6238
 - Vulnerability Analyses, Vetronics, Digitization and Logistics Support Analyses
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 833
- Total 34102

Project DG25

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Exhibit R-2 (PE 0604649A)



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R	2-2 Exhibit) DATE February	y 1997
BUDGET ACTIVITY 5 - Engineering	BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604649A Engi Development	ππε ingineer Mo nt	PE NUMBER AND TITLE 0604649A Engineer Mobility Equipment Development	PROJECT DG25
FY 1998 Planned Program:	rogram: Complete EMD Vehicle Design and Rebuild Two Prototype Vehicles Perform Component Testing and Simulation and Accomplish Program Logistics Requirements Procure System Support Package Provide Government and Contractor Program Management and Systems Engineering to Include Integrated Process Teams, Product Assurance, Vulnerability Analyses, Vetronics, Digitization and Logistics Support Analyses Begin Design of Grizzly Training Devices	Vehicles sh Program Logistic and Systems Engin ss Support Analyses	s Requirements eering to Includ	e Integrated Process Teams, Product As	urance,
FY 1999 Planned Program:	Conduct Production Qualification Test I and Limited User Test Conduct Production Qualification Test I and Limited User Test Perform Component Testing and Simulation and Accomplish Program Logistics Requirements Continue Refinement of Design to Support Vehicle Production Configuration Provide Government and Contractor Program Management and Systems Engineering to Include Integrated Process Teams, Product Assurance, Vulnerability Analyses, Vetronics, Digitization and Logistics Support Analyses Complete Design of Training Devices	Test ih Program Logistic ion Configuration and Systems Engin ss Support Analyses	s Requirements eering to Includ	e Integrated Process Teams, Product As	urance,
B. Project Change Summary FY 1997 President's Budget Request Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request	Summary FY 1996 Budget Request 10619 opriated Value -4417 Budget Request 6501	EY 1997 33337 34102 34102	<u>FY 1998</u> 20032 43748	FY 1999 8530 51420	
Change Summary Explanation: Funding: Decreased funding: Additional functions (cost reduction) Schedule: The EMD p	nding in FY 1996 (-3999) was a 1 (-418). Inding in FY 1998 (+23716) and 1 n efforts. hase was extended approximately	esult of extending the Demonstration and Validation phory (+42890) supports live fire test requirements, si 28 months to mitigate risk in system design maturation.	n and Validation test requirement i design maturat	esult of extending the Demonstration and Validation phase of the program and congressional (+42890) supports live fire test requirements, simulator development, test vehicle co 28 months to mitigate risk in system design maturation.	l osts, and unit
Project DG25	Page	Page 3 of 11 Pages		Exhibit R-2 (PE 0604649A)	(A 6
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RDT&E BUDGET ITEM JUST	EM JUST	IFICAT	FION SE	FIFICATION SHEET (R-2 Exhibit)	-2 Exhit	oit)		DATE Feb	February 1997	76
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopme	nt	PE NU 060 Dev	PE NUMBER AND TITLE 0604649A Engineer Mobility Equipment Development	π∟E ngineer l t	Mobility E	equipme	nt	H O	PROJECT DG25
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Compl	Total <u>Cost</u>
RDTE, A Budget Activity 4 PE 0603649A, Project DG24, M1 Breacher AD PA, WTCV, GZ3200, Breacher MOD PA, WTCV, G84000, Breacher Trng Dev PA, WTCV, GE0175, Breacher Spares	13591			10444	10964	83399	86313 15726 2334	125900 1527 2666	Cont'd Cont'd	71128 Cont'd 17650 Cont'd
D. <u>Schedule Profile</u>	FY 1996 2 3	4	1 2	FY 1997 2 3	4	FY 1998 2 3	8 8 4	-	FY 1999 2 3	4
Conduct Milestone II Review Award Engineering and Manufacturing Development (EMD) Contract EMD Preliminary Design Review (PDR) EMD Critical Design Review (CDR) Begin Prototype Rebuild Begin Prototype Rebuild Pegin Pre-Production Qualification Test (PQT) I			**		×		××			×
* Milestone Completed										
-										
Project DG25			Page 4 of 11 Pages	l I Pages			Exhibi	Exhibit R-2 (PE 0604649A)	304649A)	
,			762							Item 80



RD	RDT&E PROGRAM ELEMENT/	RAM EL	EMENT/PRC	SJECT (SOST BI	REAKDO	PROJECT COST BREAKDOWN (R-3)	3)	DATE F e	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ıg and Manu	facturing l	Development		PE NUMBER AND TITLE 0604649A Engi Development	AND TITLE A Engine ment	eer Mobili	PE NUMBER AND TITLE 0604649A Engineer Mobility Equipment Development		1	PROJECT DG25
A. Project Cost Breakdown Development Engineering Logistics Support System Test & Evaluation System Management SBIR/STTR Total	reakdown neering luation nt			FY 1996 3773 638 70 2020 6501	F.	FY 1997 22760 4079 192 6238 833 34102	FY 1998 25415 7067 1814 9452 43748	FY 1999 19119 11958 8452 11891			E
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Active Activity Activity Vehicle Date E.	ization History and circuit and Contract Method/Type or Funding Vehicle	d Planning Inf Award or Obligation Date	formation Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Troduct Development Organizations United Defense SS-CPIF J	SS-CPIF	ins Jan 97	NA	128986		5312	25768	35142	34976	27788	128986
United Defense	SS-CPFF	Apr 00	NA	64316						64316	64316
General Dynamics Land Sys (GDLS), Warren, MI	SS-CPFF	Dec 96	NA	5313		100	3503	400	1310		5313
Unk (simulator)	Competitive- Cost Plus	Jan 98	Unknown	5715				3074	2641	0	5715
Other Contracts	Various	Various	NA	910		345	200	150	130	430	1255
Support and Management Organizations TACOM Women Mf	igement Organi.	zanoms				553	2280	2609	3001	1797	10240
Wallell, Mil Other Gov't Agencies						61	1108	1785	1602	208	5064
Project DG25				Page	Page 5 of 11 Pages	SS.		Exhi	Exhibit R-3 (PE 0604649A)	0604649A)	
				NOCI	763 UNCLASSIFIED	۵					Item 80

RDT&E PROGRAM ELEMENT/P	ROGE	AM EL	EMENT/PR	COJECT	COSTB	REAKDO	ROJECT COST BREAKDOWN (R-3)	3)	DATE	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Manufa	cturing l	Developmen		PE NUMBER AND TIT 0604649A En Development	PE NUMBER AND TITLE 0604649A Engin Development	eer Mobil	PE NUMBER AND TITLE 0604649A Engineer Mobility Equipment Development	nent		PROJECT DG25
Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle Contract Spt to Program SBIR/STTR Test and Evaluation Organizations TECOM APG, MD		Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996 130	FY 1997 410 833	<u>FY 1998</u> 120	FY 1999 840 6790	Budget to Complete 310	Total Program 1810 833
Government Furnished Property Contract Method/Type Item or Funding Description Vehicle Test and Evaluation Property System Support Requisition Package	4)	Award or Obligation <u>Date</u> Mar 97	Delivery <u>Date</u> Jun 97		Total Prior to FY 1996	FY 1996	FY 1997	FY 1998 468	FY 1999	Budget to Complete 130	Total <u>Program</u> 728
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	nt sment					5757 744 6501	29471 4631 34102	38766 4514 468 43748	39057 5443 6920 51420	92534 2615 22100 117249	205585 17947 29488 253020
Project DG25				Pa	Page 6 of 11 Pages 764	ses		Ë	iibit R-3 (PE	Exhibit R-3 (PE 0604649A)	Item 80



RDT&E BUDGET ITEM JUSTIFICATION	TIFICATION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and Manufacturing Development	0604649A Engineer Mobility Equipment	nt DG26
	Development	

Total Cost

Cost to Complete

FY 2003 Estimate

FY 2002 Estimate

FY 2001 Estimate

FY 2000 Estimate

FY 1999 Estimate

FY 1998 Estimate

FY 1997 Estimate

FY 1996 Actual

COST (In Thousands)

88674 The Wolverine will have mobility characteristics comparable to the maneuver forces it will support. The launch time for the bridge will be five minutes or less; the retrieval MIA2 Abrams Tank chassis. The Wolverine simulator is an institutional operator training system (near term implementation) and will evolve into a future unit collective training system (mid to far term) implementation. Five institutional operator simulator systems will be located and housed at Ft. Leonard Wood to accomplish Advanced will have the capability to train two Wolverine crews (4 MOS 12Fs) concurrently. The simulators will optimize training effectiveness at reduced institutional OPTEMPO A. Mission Description and Justification: The Wolverine will provide Military Load Class (MLC) 70 vehicles the capability to cross 24-meter gaps (26-meter bridge). Individual Training (AIT) for the Military Occupational Specialty (MOS) 12B Combat Engineer on Wolverine driver/operator mission functions. Each simulator system time will be a total of ten minutes or less which includes five minutes to engage plus five minutes to place the vehicle in a travel mode. The base for the Wolverine is an 0 169 10157 12033 12603 12394 DG26 Heavy Assault Bridge

selected to complete Phase II of EMD with a Cost-Plus-Award-Fee contract. A contract was awarded in FY 1996 for 2 Wolverine systems with an option for four additional systems that will complete development testing. Follow-on Fixed Price contracts will be awarded for LRIP and Production requirements. STRICOM will award contracts Acquisition Strategy: Side-by-side Demonstration Testing was completed in FY 1993 on three different prototype bridges and launchers for Phase I of Engineering and Manufacturing Development (EMD). As a result of the testing and submission of proposals, one contractor, General Dynamics Land Systems Division (GDLS), was for the development of training devices. It is planned that the contractor will develop simulators for both Wolverine and the Grizzly. Maximum use will be made of existing software from M-1 Tank Driver Trainer and actual system vehicle dynamics and operation software.

FY 1996 Accomplishments:

- Continued EMD Phase II Contract; Completed Prototype Build; Completed Contract Testing and Supported Government Testing
 - 2600 Continued Developmental Contract
- 119 Awarded Various Engineering Services Contracts
- Performed Program Management; Conducted Logistics Demonstration, Started PPQT 2018

[otal 12394

FY 1997 Planned Program:

- Engineering Development Contract for Migration to System Enhancement Program and Test Program Sets (TPS) development 10222
- 2073 Complete EMD II Contract
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 308

Total 12603

Project DG26

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibi	t) DATE	TE February 1997	1997
вирдет астіміту 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604649A Engi	ो गार∟ह Engineer M ∌nt	PE NUMBER AND TITLE 0604649A Engineer Mobility Equipment Development		PROJECT DG26
 FY 1998 Planned Program: 400 Contractor Support For Test 1600 Developmental Contract 287 Program Management 6698 Start Live Fire Test and Purchase System Support Package 335 Award Design for Training Device Contract and Provide G 2713 Begin Design of Simulator Total 	pport Package and Provide Government Program Management	m Management			
 FY 1999 Planned Program: 800 Contractor Support of Test 1000 Developmental Contract and Refurbishment of Test Vehicles 298 Program Management 5438 Conclude Live Fire Test, Conduct Production Verification Test, and Support IOT&E 288 Provide Government Program Management for Training Devices 2333 Complete Design of Simulator Total 10157 	ss l'est, and Support vices	IOT&E			
B. Project Change SummaryFY 1996FY 1997 President's Budget12714Appropriated Value13071Adjustments to Appropriated Value-677FY 1998 President's Budget Request12394	FY 1997 2073 12603 12603	FY 1998 4548 12033	FY 1999 8191 10157		
Change Summary Explanation: Funding: Increase in FY 1997 reflects a congressional increase of 9300 for migration to Abrams System Enhancement Program (SEP) and 1230 for Test Program Sets development. Increase in FY 1998 (7485) and FY 1999 (1966) for Live Fire Test requirements and the inclusion of the Wolverine training device R&D funding.	or migration to Al ive Fire Test requ	orams System En irements and the	hancement Program (SEF inclusion of the Wolverii	P) and 1230 for Tes ne training device I	st Program R&D
Project DG26	Page 8 of 11 Pages		Exhibit R-	Exhibit R-2 (PE 0604649A)	
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RDT&E BUDGET ITEM JUS		TIFICAT	TIFICATION SHEET (R-2 Exhibit)	EET (R	-2 Exhit	oit)		DATE Feb	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	g Developme	ent	PE NUT 0602 Dev	PE NUMBER AND TITLE 0604649A Engi Development	^{ITLE} ngineer I t	PE NUMBER AND TITLE 0604649A Engineer Mobility Equipment Development	quipme	ıt.	H O	PROJECT DG26
C. Other Program Funding Summary PA, WTCV, GZ3250, HAB MOD PA, WTCV, GE0177, HAB Spares PA, WTCV, G84600 HAB Training Devices	<u>FY 1996</u> 14611	FY 1997 51322	<u>FY 1998</u> 42205 930	FY 1999 51950 887 398	FY 2000 71190 1416 15723	FY 2001 90110 1475 1313	FY 2002 111467 1864 1100	FY 2003 122511 2191	To Compl Cont'd Cont'd	Total Cost Cont'd Cont'd L8534
D. Schedule Profile	FY 1996	_	FY 2	FY 1997	-	FY 1998	_	т с	FY 1999	_
Begin Prod. Qualification Testing (PQT) Award of 6 Test Vehicles End PQT Testing Milestone IIIa LRIP Contract Award Award of Contract for Test Vehicles Begin Live Fire/Vulnerability Test End Live Fire/Vulnerability Test Begin PVT Begin PVT Begin IOT&E End PVT	· *		· ××	×	· ×			· ×		××
* Milestone Completed Project DG26			, Page 9 of 11 Pages	Pages			я Х Гіс	Evhihit R.2 (PE OROJAGAQA)	046404)	
			- 10 2 20 -	200					7 7010	Item 80

RDT	&E PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT (SOST BI	REAKDO	WN (R-	3)	DATE F	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	g and Manu	facturing l	Jevelopment		PE NUMBER AND TITLE 0604649A Engi Development	AND TITLE A Engine ment	eer Mobili	PE NUMBER AND TITLE 0604649A Engineer Mobility Equipment Development		1	PROJECT DG26
A. Project Cost Breakdown Development Engineering Logistics Support System Test & Evaluation System Project Management SBIR/STTR Total	eakdown ering lation lgement			FY 1996 9711 666 1280 737		FY 1997 12150 145 308 12603	EY 1998 3642 640 7129 622 12033	FY 1999 2256 550 6765 586			
B. Budget Acquisition History and Planning Information	ion History and	l Planning Inf	ormation								
Performing Organizations Contractor or Contra	zations Contract	•									
Government Performing	Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Frior to	,	,	1	,	Budget to	Total
Activity Vehicle Product Development Organizations	<u>Vehicle</u> int Organization	<u>Date</u> ns	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Gen Dyn Land Sys	C-CPAF	Jan 94	NA	36420	26690	7657	2073				36420
Gen Dyn Land Sys	SS-CPFF	Feb 96	NA	NA		2600	10222	2000	1300		16122
SMS Corp	SS-FFP	May 92	NA	NA	2798						5798
Unknown (Training Devices)	Competitive- Cost Plus	Jan 98	NA	5046				2713	2333	0	5046
Other Contracts	Various	Various	NA	NA	753	119					872
Support and Management Organizations PMO Support	gement Organiz	zations			5267	727		287	298		6239
ANAD					396						396
SBIR/STTR PM STRICOM	MIPR	Oct 97					308	335	288	169	308
Project DG26				Page	Page 10 of 11 Pages	ses		Exh	Exhibit R-3 (PE 0604649A)	0604649A)	
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	GRAM EL	EMENT/PR	OJECT	COST B	REAKD	OWN (R-	3)	DATE F	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	nufacturing	Development		PE NUMBER AND TITLE 0604649A Engi Development	AND TITLE A Engin ment	PE NUMBER AND TITLE 0604649A Engineer Mobility Equipment Development	ty Equipn			PROJECT DG26
Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle Other Gov't	oe Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996 1375	FY 1996 10	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program 1385
Agencies Test and Evaluation Organizations TECOM APG, MD	suo			635	1247			5738		7620
AMSAA APG, MD WSMR White Sands, NM				25			5150	200		5150
Government Furnished Property Contract Method/Type Item or Funding Description Vehicle Product Development Property	y be Award or Obligation <u>Date</u>	Delivery <u>Date</u>		Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Various Gov't MIPR Sources Test and Evaluation Property To Be Determined MIPR	Various Apr 96	Various Jun 96		379	1 33		1548			380
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project				33620 7038 660 41318	10377 737 1280 12394	12295 30 8 12603	4713 622 . 6698 .12033	3633 586 5938 10157	169	64638 9460 14576 88674
Project DG26			Page	Page 11 of 11 Pages	<i>S</i> 3		Exhi	Exhibit R-3 (PE 0604649A)	0604649A)	Item 80
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RDT&E BUDGET ITEM JUS	JDGET IT	EM JUS		TION SE	HEET (R	FIFICATION SHEET (R-2 Exhibit)	bit)		date Fe l	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	facturing D	evelopm	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604710A Nigh Development	PENUMBER AND TITLE 0604710A Night Vision Systems - Engineering Development	on Syste	ms - Enç	jineering		
COST (In Thousands)	1 8)	FY-1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		37658	34870	33456	21255	21817	18692	27214	17414	Continuing	Continuing
DL69 Horizontal Technology Integration Second Generation FLIR (HTI SGF)	Second	27872	18036	11477	0	0	0	0	0	0	95765
DL70 Night Vision Devices Engineering Development	Development	9826	9283	9981	11277	21817	18692	27214	17414	Continuing	Continuing
DL74 Long Range Advanced Scout Surveillance System (LRAS3)	veillance	0	7551	11998	9978	0	0	0	0	0	29527

(HTI SGF) thermal sensors and other technologies, for use by US Army scouts. The projects in this PE support development efforts in the engineering and manufacturing Mission Description and Budget Item Justification: This program element provides night vision technologies required for U.S. defense forces to engage enemy forces twenty-four hours a day under conditions with degraded visibility due to darkness, adverse weather and battlefield obscurants. Developments and improvements to high (TLOS). Project DL74 focuses on a long range multi-sensor system utilizing Horizontal Technology Integration Second Generation Forward Looking Infrared (FLIR) inserting key thermal sensor technology into common battle groups. Project DL70 focuses on a variety of night vision electro-optical equipment for use by individual soldiers and a variety of other systems such as a Synthetic Aperture Radar (SAR), Moving Target Indicator (MTI) radar and the Target Location Observation System identification, acquisition and engagement as well as improve battlefield command and control in "around the clock" combat operations. Project DL69 is focused on performance night vision electro-optics, laser, thermal and radar systems and systems integration of related multi-sensor suites will enable near to long range target development phases of the acquisition strategy and therefore are correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604710A)

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R	RDT&E BUDGET ITEM JUS		TIFICAT	TION SE	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 5 - Engineering	вирдет астіуту 5 - Engineering and Manufacturing Developm	evelopm	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604710A Night Vision Systems - Engineering Development	ritle light Visi It	on Syste	ms - Enç	jineering		PROJECT DL69
ÿÖ	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DL69 Horizontal Technology Integ Generation FLIR (HTI SGF)	Horizontal Technology Integration Second Generation FLIR (HTI SGF)	27872	. 18036	11477	0	0	0	0	0	0	95765
A. Mission Descriptic Army to insert key then Surveillance System (I development is in two j and display. Funds in t	A. Mission Description and Justification: Horizontal Technology Integration Second Generation Forward Looking Infrared (FLIR) (HTI SGF) will enable the Army to insert key thermal sensor technology into the highest priority forces [the M2A3 Bradley Fighting Vehicle System (BFVS), the Long Range Advanced Scout Surveillance System (LRAS3), and the M1A2 Abrams]. The HTI SGF will allow all vehicles in a common battle group to see the same thermal image. The HTI SGF will allow all vehicles in a common battle group to see the same thermal image. The HTI SGF development is in two parts, an "A" kit, which is specific to the vehicle, and includes integration and installation, and a "B" kit, which includes the common FLIR sensor and display. Funds in this project will develop the "B" kit. In addition, Aviation B Kit capabilities will be demonstrated to meet FY 1997 Congressional direction.	ntal Technol te highest pri ns]. The HT cific to the v B" kit. In ad	ology Integra ority forces I SGF will al ehicle, and ii dition, Aviat	tion Secont [the M2A3] llow all veh ncludes inte ion B Kit ca	d Generatio Bradley Figh icles in a cor gration and i	n Forward tting Vehick nmon battle installation,	Looking Inf • System (Bl group to see and a "B" ki	FVS), the Lc FVS), the Lc the same th t, which incl	R) (HTI SG ong Range A ermal image tudes the con Congressior	F) will enabl dvanced Sco The HTI S nmon FLIR s	e the ut GF ensor
Acquisition Strategy: fee contract.	Acquisition Strategy: The common Second Generation FLIR sensor and display "B" Kit is being developed and fabricated using a competitively awarded cost plus award fee contract.	tion FLIR se	nsor and disp	olay "B" Kil	t is being dev	veloped and	fabricated u	sing a comp	stitively awa	rded cost plu	s award
FY 1996 Accomplishments:	ments: Continued development, fabrication of "B" Kit, integration kits and pilot line. Initiated sight level qualifications (contractor technical testing) of EMD prototypes for HTI SGF. Performed qualification testing of EMD "B" kit prototypes.	cation of "B" ons (contract of EMD "B	Kit, integral or technical I "kit prototy	tion kits anc testing) of E pes.	l pilot line. 3MD prototy	pes for HTI	SGF.				
FY 1997 Planned Program:	ogram: Complete development and fabrication of "B" kit for M1A2 and M2A3. Complete sight level qualification testing of EMD prototypes for HTI SGF. Fabricate prototype Aviation B Kit for demonstration Small Business Innovative Research / Small Business Technology Transfer (SBIR/STTR)	orication of " ion testing o Kit for dem earch / Smal	B" kit for M f EMD prote onstration I Business T	11A2 and M otypes for H echnology [2A3. TI SGF. Fransfer (SB	IR/STTR)					

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Project DL69

Exhibit R-2 (PE 0604710A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	IFICATI(HS NC	EET (R-	2 Exhik	oit)		DATE Febr	February 1997	76
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	ınt	PE NUN 0604 Deve	PE NUMBER AND TITLE 0604710A Nigh Development	⊤∟E ight Visic t	on Syste	PE NUMBER AND TITLE 0604710A Night Vision Systems - Engineering Development	ineering	R O	PROJECT DL69
 FY 1998 Planned Program: 409 Support M1A2 Vehicle Testing. 408 Support BFVS Vehicle Testing. 8410 Fabricate "B" Kits for LRAS3 test units. 2250 Finalize Ground HTI "B" Kit Interface Control Document and final specifications. Total 11477 	trol Document	t and final	specification						
FY 1999 Planned Program: No planned program									
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	EY 1996 28584 28873 -1001	EX 1997 13443 18036		3317	FY 1999 0	<u>66</u>			
FY 1998 Pres Bud Request Change Summary Explanation: Funding: FY 1998 adjustments d	2/8/2 due to Army \$	18 Science Bo	18036 3oard efficienc	11477 sy reduction	s (-223) and	o I for proper i	2/8/2 18036 114// 0 lue to Army Science Board efficiency reductions (-223) and for proper funding of LRAS3 LRIP units	AS3 LRIP 1	ınits
(+7937).									
C. Other Program Funding Summary FY 1996	FY 1997 F	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total Cost
6.4 RDTE 0604710A, A Kit LRAS3 (DL74) 0 6.7 RDTE 0203735A, A Kit (D330) 22438	•	11998 3599 0	9978	0 0 45473	0 0 45795	0 0	0 0 44886	Cont	29527 144042 Cont
Bradley "B" Kit brams A and "B" Kit	25752 0	16409	53407	53645	64437	50997	53047 79163	Cont	Cont
"Kit	22951	73926	103228	87381	61603	35658	39401	Cont	Cont
The 0203735A program element funds the "A" kit portion of the HTI SGF development, for the M1 Abrams Tank. WTCV funds the production tails for these platforms.	HTI SGF deve	lopment, f	or the M1 A	brams Tank	WTCV fu	inds the proc	luction tails fo	or these plati	orms.
Project DL69	P	Page 3 of 15 Pages	. Pages			Exhibi	Exhibit R-2 (PE 0604710A)	04710A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604710A Night Vision Systems - Engineering Development	PROJECT - Engineering DL69
D. Schedule ProfileFY 199612341Initiate Developmental Testing for M2A3X*Vehicle	FY 1997 FY 1998 2 3 4 1 2 3	FY 1999 4 1 2 3 4
"B" Kit Initial Qualification M1A2 sight Qualification Special In-Process Review for B Kit Initiate M2A3 Limited User Test	×	
Low Rate Initial Production M2A3 Support M1A2 Vehicle Testing Support BFVS Vehicle Testing Finalize ICD and Specs for Ground HTI "B" Kit	× × ×	
Aviation B Kit Fabrication Aviation B Kit Integration into AH-64 (platform funded) Aviation B Kit Flight Demo (platform funded)	× × ×	
*Milestone Completed		
Dailot Di 60	Done A of 15 Done	E. H. H. 19 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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RD.	T&E PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT	SOST BI	REAKDO	OWN (R-	3)	DATE F (February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	g and Manu	facturing L	Jevelopment		PE NUMBER AND TITLE 0604710A Nigh Development	AND TITLE A Night ment	Vision Sy	PE NUMBER AND TITLE 0604710A Night Vision Systems - Engineering Development	ngineerin		PROJECT DL69
A. Project Cost Breakdown Primary Hardware Development Government Engineering Support Project Management Support SBIR/STTR Total	eakdown Development ering Support t Support			EY 1996 25872 1543 457 27872	FY 1	FY 1997 16161 981 461 433 18036	FY 1998 10916 395 166	FY 1999 0 0			
B. Budget Acquisition History and Planning Information	tion History and	l Planning Inf	ormation								
Performing Organizations Contractor or Contractor	izations Contract										
Government Performing	Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to					Budget to	Total
Activity Vehicle Product Development Organizations	Vehicle ent Organization	<u>Date</u> ns	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Producibility	Various	March 94	3876	3876	3876	0	0			0	3876
Contracts Texas Instruments,	C/CPAF	July 94	70401	70401	28124	22232	9203	10842		0	70401
McKinney, TX SADA II, SBRC T&M Hughes, EI	C/FP SS/T&M	March 96 July 96	2116 3556	2116	0 0	2116	0 1958	0 74		0 0	2116
Segundo, CA Lockheed Martin,	CPFF	February 97		2000	0	0	2000	0		0	2000
Support and Management Organizations	gement Organiz	ations			, u	7	Ş	,		,	
Froject Mgmt ASARC Support	MIPR				856 250	45/ 0	461 0	166 0		0 0	1940
CECOM NVESD SBIR/STTR	MIPR				5274	1543	981	395		0	8193
Test and Evaluation Organizations: None. Technical/qualification tests are performed by contractor and all Operational Tests are funded by Host platforms.	n Organizations	: None. Tech	nical/qualification	tests are perf	ormed by co	ntractor and	all Operationa	ıl Tests are fun	ıded by Host	platforms.	
Government Furnished Property: None	shed Froperty:	None									

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Project DL69

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Exhibit R-3 (PE 0604710A)

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BF	REAKDO	WN (R-3		DATE F6	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604710A Nigh Development	AND TITLE A Night \ ment	PE NUMBER AND TITLE 0604710A Night Vision Systems - Engineering Development	tems - Er	ngineerin		PROJECT DL69
Subtotal Product Development Subtotal Support and Management	Total Prior to FY 1996 38380	<u>FY 1996</u> 27872	FY 1997 18036	FY 1998 11477	FY 1999	Budget to Complete	Total Program 95765
Subtotal Test and Evaluation Total Project	38380	27872	18036	11477			95765
·							
Project DL69	Page 6 of 15 Pages	S		Exhil	Exhibit R-3 (PE 0604710A)	0604710A)	Item 81
	(1)						

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SI	HEET (R	۲-2 Exhi	bit)		DATE Fel	February 1997	160
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developm	ent	PE N 06(De	PE NUMBER AND TITLE 0604710A Night Vision Systems - Engineering Development	тіт <u>ге</u> Night Visi nt	on Syste	ms - Enç	gineering		PROJECT DL70
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DL70 Night Vision Devices Engineering Development	9826	9283	9981	11277	21817	18692	27214		17414 Continuing Continuing	Continuing

detect Optical and Electro Optical threat, can be used as a covert illuminator and fire direction pointer. Driver's Vision Enhancer (DVE) - a thermal imaging device used for laser designator/rangefinder capable of designating vehicle targets out to 5km and ranging targets out to 9995 meters and processing target location data for export through a A. Mission Description and Justification: Night Vision Devices Engineering Development: This project develops and improves high performance night vision electrodriving combat, combat service, and combat service support vehicles and allows drivers to see obstacles through fog and battlefield obscurants. The DVE P3I will enhance digital interface. Integrated Sensor Suite (ISS) programs will provide the structure for interoperability of sensors to include: MELIOS, LLD/R, TLOS, LVRS, TWS, DVE, measurement (C/VAM) and ballistic calculation and adjustment. Target Location Observation System (TLOS) - an active/passive day/night sight for individual soldiers to Improvements (P31) - TWS a forward looking infrared (FLIR) used for surveillance and fire control with individual and crew served weapons. The TWS with P3I is a part optics, thermal and laser systems, and systems integration of related multi-sensor suites to enable near to long range target acquisition and engagement as well as improve LRAS-3, Synthetic Aperture Radar (SAR), Infrared Line Scanner (IRLS), FLIR, visible imagers, hyperspectral cameras and Moving Target Indicator (MTI) radars. This channel in order to provide the driver with the optimum image in all weather conditions. Lightweight Laser Designator/Rangefinder (LLD/R) - a day/night manportable battlefield command and control in "around-the-clock" combat operations. Near term systems in development are: Thermal Weapon Sight (TWS) Pre-planned Product of the Land Warrior program, and supports crew-served weapon applications. The TWS P3I module is an eyesafe laser rangefinder (LRF) with compass/vertical angle nultispectral (infrared and visual) target acquisition capabilities to be incrementally inserted into ongoing production efforts (TLOS, LRAS-3 and other laser systems). the image quality for the driver by optimizing the interaction between the driver, sensor and environmental observables, and will incorporate an image intensifier (I2) will facilitate the merging of existing sensor data for digital distribution within the Army's Technical Architecture (ATA). Continue development and evaluation of

Acquisition Strategy: The several programs under development in this line (i.e., TWS, TLOS, LLDR, DVE and ISS) are based on competitively awarded cost plus incentive fee contracts.

FY 1996 Accomplishments:

- Integrated commercial off-the-shelf (COTS) components and evaluated as potential upgrades to TLOS program.
 - Conducted TLOS P3I studies.
- Conducted operational evaluation of TWS P3I that incorporates a Laser Rangefinder.
- Initiated development for DVE P3I prototypes. 1168
- Continued development of LLDR engineering prototype. 99/1
- Initiated an ISS utilizing MTI radar, FLIR and daylight imagers for use on remotely controlled airships and other airborne platforms. 3466

Project DL70

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Exhibit R-2 (PE 0604710A)



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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ICATION S	HEET (R	-2 Exhik	it)		DATE Feb	February 1997	97
BUDGET ACTIVITY 5 - Engineering	BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE 1	PE NUMBER AND TITLE 0604710A Night Vision Systems - Engineering Development	π∟E ight Visic t	n Syster	ns - Eng	ineering	ā Q	PROJECT DL70
FY 1997 Planned Program:	rogram: Complete development of TLOS-related prototypes incorporating results from COTS evaluation and studies. Conduct HTI Laser trade studies to support developmental/COTS/NDI Integration program Complete development of DVE P3I prototypes. Provide TWS support to Land Warrior program and complete P3I efforts. Conduct limited user test on engineering prototype LLDR, Award LLDR EMD contract. Conduct Integration and Demonstration of the ISS. Small Business Innovative Research / Small Business Technology Transfer (SBIR/STTR)	ypes incorporating elopmental/COTS and complete P3 ype LLDR, Award SS.	g results from C S/NDI Integrati I efforts. d LLDR EMD y Transfer (SB)	OOTS evalua on program contract. IR/STTR)	tion and stud	lies.			
FY 1998 Planned Program:	ogram: Develop and integrate LLDR EMD models. Conduct ISS integration, test and evaluation to include data dissemination for multiple applications. Continue development and evaluation of multispectral target acquisition capabilities	include data disser pectral target acqu	mination for m uisition capabil	ultiple applic ities	ations.				
FY 1999 Planned Program:	ogram: Conduct technical tests and user operational evaluation of LLDR EMD models. Continue ISS integration and technical tests. Prepare to transition identified multispectral target acquisition capabilities	uluation of LLDR get acquisition cap	EMD models.						
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	ry I Value	FY 1996 10029 10130 -344 9786	FY 1997 12482 9283 9283	FY 1998 11304 9981	FY 1999 16256 11277	6/20 /			
Change Summary Ex	Change Summary Explanation: Funding: FY 1998 and FY 1999 adj	adjustments due to Army Science Board efficiency reductions (FY 98 -1323/FY 99 -4979).	rmy Science B	oard efficier	cy reduction	ıs (FY 98 -1	1323/FY 99 -	4979).	
C. Other Program Funding Summary Night Vision Devices KA3500 OPA2	EY 1996 83726	FY 1997 FY 1998 164862 85312	EY 1999 83805	FY 2000 141813	FY 2001 141979	FY 2002 149915	FY 2003 148841	To Compl	Total Cost Continue
Project DL/0		rage 8 01 . 777	rage 8 of 13 rages 777			EXDIDIT	EXNIBIT K-2 (PE 0604710A	04710A)	Item 81

RDT&E BUDGET	ITEM JUSTIFICATIO	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	(:	DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Development	PE NUMBER AND TITLE 0604710A Night Vision Systems - Engineering Development	Systems - En	gineering	Р R ОЈЕСТ DL70
D. Schedule Profile	FY 1996	FY 1997	FY 1998	FY 1999	4
Complete TWS user test (IOTE) TWS Milestone III Production decision TWS Full Production competitive award Initiate DVE Enhancements Initiate DVE Enhancements DT/OT DVE Milestone III IPR Initiated TLOS P3I FLIR finder Demonstrator Complete TLOS related prototypes Initiate HTI Laser Trade Studies Award Multispectral Target Acquisition LLDR Limited User Evaluation LLDR EMD Award LLDR EMD Award LLDR EMD Integration LLDR Technical Test LLDR User Operational Tests Conduct HTI Laser NDI system user evaluation Initiate ISS Integration Initiate ISS Test, Evaluation & Demonstration Initiate ISS Test, Evaluation Conduct ISS Technical Tests *Milestone Completed	* * *				×
Project DL70	Page	Page 9 of 15 Pages	Exhi	Exhibit R-2 (PE 0604710A)	

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RD	RDT&E PROGRAM ELEMENT/	RAM EL	EMENT/PRO	JECT C	OST BI	REAKDO	PROJECT COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	g and Manu	facturing D	Jevelopment		PE NUMBER AND TITLE 0604710A Nigh Development	AND TITLE A Night ment	Vision Sya	PE NUMBER AND TITLE 0604710A Night Vision Systems - Engineering Development	gineerin		PROJECT DL70
A. Project Cost Breakdown Primary Hardware Development Contractor Engineering / Trade Studies Government Engineering Support Project Management Support Test and Evaluation SBIR/STTR Total	ceakdown Development ring / Trade Stud sering Support t Support	sə <u>l</u>		FX 1996 5318 873 873 528 352 2715	XI.	FY 1997 5073 900 458 300 2338 214 9283	FY 1998 7450 0 471 325 1735	EY 1999 8250 0 551 325 2151			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform	tion History and izations Contract Method/Tyne	Planning Info	٥ <u>:</u>	Project	Total						
Performing or Funding (Activity Vehicle I Product Development Organizations	or Funding Vehicle	Obligation Date		Office EAC	Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Hughes Aircraft Co., El Segundo,	C/CPIF	Dec 90	42490	42490	42490	0	0			0	42490
Lockheed-Sanders, Nashua, NH	C/CPIF	Feb 92	18769	18769	69281					0	18769
Magnavox, Mahwah, NJ	C/CPIF	Aug 93	8321	8321	7571	250	200			0	8321
Texas Instruments, McKinney TX	C/CPIF	Aug 93	11524	11524	10774	250	200			0	11524
Various (Studies	C/CPIF	3Q96				2591	573				3164
Litton Laser,	C/CP	Aug 95			1556	1000	0			0	2556
LLDR (TBS)	C/CP	2Q97				0	1800	3500	3050	750	9100
Project DL70				Page	Page 10 of 15 Pages	ies		Exhik	Exhibit R-3 (PE 0604710A)	0604710A)	
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RDT	RDT&E PROGRAM ELEMENT/	RAM ELI	EMENT/PR	OJECT	PROJECT COST BREAKDOWN (R-3)	REAKDO	JWN (R-	3)	DATE F.	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	g and Manu	facturing [evelopment		PE NUMBER AND TITLE 0604710A Nigh	AND TITLE A Night	Vision Sy	DE NUMBER AND TITLE OG04710A Night Vision Systems - Engineering	ngineerin		PROJECT DL70
					Development	ment					
Contractor or Government	Contract Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Nichols Research,	C/CPIF	2Q96		200	0	100	200	200	200	0	700
(ISS Integration)											
HTI Laser Trade	C/CP	3Q97					006			0	006
Studies (TBS)											
Multispectral	CCPIF	2098						1900	3000	Continue	4900
target acq. (TBS)	C/CP	2097			_	-	750				031
California	C/CPIF	<u>z</u> () Mar 96			0	2000	750				06/
Microwave, MD					•						0017
ISS (TBS)	C/CP	2Q98			0	0	0	1850	2000	Continue	3850
Support and Management Organizations	gement Organiz	ations									
Project Mgmt					2203	352	300	325	325	Continue	3505
CECOM NVESD	MIPR				5585	453	383	396	476	Continue	7293
Other Support	MIPR				2230	75	75	75	75	Continue	2530
SBIK/STIK	:						214				214
Test and Evaluation Organizations	Organizations										
OPTEC	MIPR				3739	086	1377	955	1345	Continue	8396
Oth. Gov't Agency	MIPR				0	1735	961	780	908	Continue	4282
Government Furnished Property: None	hed Property: 1	Vone									
Subtotal Product Development	/elopment				81160	6191	5973	7450	8250	750	109774
Subtotal Support and Management	Management				10018	880	972	962	876	2	13542
Subtotal Test and Evaluation	aluation				3739	2715	2338	1735	2151		12678
Total Project					94917	9826	9283	1866	11277	750	135994
Project DL70				Page	Page 11 of 15 Pages	sa		Exh	Exhibit R-3 (PE 0604710A)	0604710A)	

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RDT&E BUDGET ITEM JUS	T ITEM JUS	STIFICA	TION S	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fe l	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ng Developn	nent	PE NI 060 Dev	PE NUMBER AND TITLE 0604710A Night Vision Systems - Engineering Development	TITLE light Visi nt	on Syste	ms - En	gineering		PROJECT DL74
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DL74 Long Range Advanced Scout Surveillance System (LRAS3)	0	7551	11998	9978	0	0	0	0	0	29527
A. Mission Description and Justification Project DL74 - Long Range Advanced Scout Surveillance System (LRAS3): This project will develop the Long Range Advanced Scout Surveillance System (LRAS3), which is a long range multi-sensor system for US Army scouts which will provide the capability to detect, recognize, identify, range and determine location of potential targets. Currently, US Army scouts do not have the necessary equipment to perform these functions "around the clock." LRAS3 will utilize the HTI SGF thermal sensor and will enable scouts to function "around the clock" in adverse weather and penetrate battlefield obscurants	roject DL74 - Lo), which is a long ntial targets. Curr or and will enable	ng Range A ; range multi- rently, US Ar	dvanced Scensor systemy scouts duction "arour	out Surveille m for US Ar o not have th	ance System my scouts w e necessary in adverse v	(LRAS3): hich will proequipment to	This project ovide the cal o perform the	t will develor pability to de tese function ittlefield obse	p the Long F etect, recogn is "around th	kange ize, e clock."
Acquisition Strategy: This project will pursue a competitive acquisition utilizing best value source selection procedures for the Engineering and Manufacturing Development contract.	a competitive ac	quisition utili	izing best va	lue source se	lection proc	edures for th	e Engineeri	ng and Manı	ufacturing	
FY 1996 Accomplishments: Project not funded in FY 96	led in FY 96									
 FY 1997 Planned Program: 100 Milestone I/II IPR to acquire 4 prototypes for Development Test (DT), 2 for limited user test, and 10 LRIP units for Operational Test 135 Conduct Source Selection Evaluation Board for LRAS3 	quire 4 prototypes on Evaluation Bos	s for Develop ard for LRAS	ment Test (I	JT), 2 for lin	nited user tes	it, and 10 LR	UP units for	. Operational	l Test	
 7132 Award EMD contract. 184 Small Business Innovative Research / Small Business Technology Transfer (SBIR/STTR) Total 7551 	ve Research / Sm	all Business '	Technology	Transfer (SB	IR/STTR)					
FY 1998 Planned Program:	pe development f	or LRAS3 DT.	<u>د</u>							
 500 Fabricate A Kits for LRASS LAIF. 500 Perform operational assessment 525 Initiate refurbishment of LRAS3 Prototypes used in DT to support OT. Total 11998 	AASS LEUF. essment [LRAS3 Prototyp	es used in D'	T to support	OT.						
			;	ļ				!		
Project DL74			Page 12 of 15 Pages	15 Pages			Exhib	Exhibit R-2 (PE 0604710A))604710A)	
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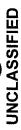
RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ITEM JUST	TIFICAT	ION SH	EET (R	-2 Exhik	oit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	J Developme	ant	PE NUI 0604 Deve	PE NUMBER AND TITLE 0604710A Nigh Development	ı⊤∟E ight Visiα t	PE NUMBER AND TITLE 0604710A Night Vision Systems - Engineering Development	ms - Eng	jineering		PROJECT DL74
 FY 1999 Planned Program: 4700 Complete refurbishment of Prototypes and spares for OT and LRIP units after OT. 4021 Conduct Operational Test. 1257 Milestone III/Full Production/Type Classification IPR Total 9978 	f Prototypes and son'Type Classifi	spares for O	F and LRIP	units after C	T.					
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996	FY	<u>FY 1997</u> 7712 7551	FY 1998 7025	FY 1999 4475	<u> </u>			
Adjustments to Appropriated value FY 1998 Pres Bud Request		0		7551	11998	8266	78			
Change Summary Explanation: Funding: FY 1998 and FY 1999 increases are to accelerate funding of LRIP test units (FY 98 +4973/FY 99 +5503)	198 and FY 1999	increases are	to accelera	te funding o	f LRIP test ı	ınits (FY 98	+4973/FY	99 +5503)		
C. Other Program Funding Summary	EV 1006	EV 1007	EV 1009	EV 1000	EV 2000	EV 2001	EV 2003	EV 2002	To	Total
0603774A D131 Budget Activity 4 6.4 RDTE 0604710A, B Kit (DL69) LRAS-3 K38300 OPA2	3167 27872 0	2769 2769 18036 0	2939 11477 0	2893 2893 0 37567	3298 0 45473	4193 4193 0 45795	5150 5150 0 40552	5172 5172 0 44886	Continue 0	Continue 95765
D. Schedule Profile	FY 1996 2 3	4	FY 2	FY 1997 2 3	4	FY 1998	3.4		FY 1999	4
Milestone I/II/LRIP IPR Award EMD Contract PDR			· ×	· ××	· · ×	1		4		-
Initiate fabrication of test units. Complete Prototype Development for DT					×	×	<u>,</u>			
Conduct Development Lest Initiate Prototype Refurbishment Conduct Operational Assessment						×	< ×			
Complete Refurbishment/Spares for OT		,	,	\$			×	 		
Project DL74			Page 13 of 15 Pages	5 Pages			Exhibi	Exhibit R-2 (PE 0604710A)	604710A)	;
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604710A Night Vision Systems - Engineering Development		PROJECT DL74
D. Schedule Profile FY 1996	FY 1997 FY 1998	FY 1999	
		•	
Decidat DI 74		E. W. I. I. I. O.	
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	CT COST E	REAKDO	JWN (R-	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBE 060471 Develo	PE NUMBER AND TITLE 0604710A Night Vision Systems - Engineering Development	Vision Sy	stems - Ei	ngineerin	:	PROJECT DL74
A. Project Cost Breakdown Primary Hardware Development Project Management Support Test and Evaluation Government Engineering Support SBIR/STTR Total	FY 1996 FY	FY 1997 7132 135 0 100 184 7551	FY 1998 11077 141 500 280 11998	FY 1999 6546 141 3011 280 9978	01/2 0 **		
B. Budget Acquisition History and Planning Information							
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Project Performing or Funding Obligation Activity Office Activity Vehicle Date EAC EAC	roject Total Office Prior to EAC FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
TBS C/CPIF 2097		0	7132	11077	6546	0	24755
Support and Management Organizations Project Mgmt CECOM NVESD MIPR SBIR/STTR		0	135 100 184	141	141	0 0	417 660 184
Test and Evaluation Organizations TEXCOM MIPR OPTEC MIPR		0 0	0 0	500	3011	0	500 3011
Government Furnished Property: None							
Subtotal Product Development. Subtotal Support and Management Subtotal Test and Evaluation Total Project			7132 419 7551	11077 421 500 11998	6546 421 3011 9978		24755 1261 3511 29527
Project DL74	Page 15 of 15 Pages	ages		Exh	Exhibit R-3 (PE 0604710A)	0604710A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JDGET IT	EM JUS	TIFICA	TION S	HEET (F	१-2 Exhi	bit)		DATE Fel	February 1997	260
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	facturing L	evelopm	ent	PE N 06(PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	TITLE Sombat F	eeding, (Slothing,	and		
COST (In Thousands)	<i>1</i> 8)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	•	16049	76428	55964	43539	31947	31865	34527	32833	Continuing	Continuing
DC40 Unit/Organizational Equipment		3003	1746	1795	1811	1841	2026	2064	2072	Continuing	Continuing
DL40 Clothing and Equipment		2094	4851	3684	4330	3698	4476	4865	4889	Continuing	Continuing
D548 Military Subsistence System		802	792	884	1294	1643	1765	1877	1884	Continuing	Continuing
D667 Land Warrior		0	47893	33031	16965	7664	8892	11204	9388	Continuing	Continuing
D668 Soldier Enhancement Program		10150	21146	14563	14645	14706	14706	14517	14600	Continuing	Continuing
D680 Mounted Warrior		0	0	2007	4494	2501	0	0	0	0	8992

unit/organizational equipment, weapons/munitions, clothing and individual equipment, fabric shelters, field service equipment, food and food service equipment to enhance Mission Description and Budget Item Justification: Supports Engineering and Manufacturing Development (EMD) and Non-Developmental Item (NDI) evaluation of soldier efficiency, effectiveness, lethality, sustainability and survivability. New food items and food service equipment will be developed to reduce food service logistics Warrior program will produce the first fully integrated fighting system for dismounted combat soldiers. The Soldier Enhancement Program provides "soldier items" that can be procured in three years or less. The projects in this Program Element support research efforts in the Engineering and Manufacturing Development phase of the collective protective shelters; decontamination items; and improved space heaters to shelter and sustain the soldiers in the field and improve quality of life. The Land requirements for all four Services. The organizational equipment program supports development of a new generation of field device support items: small, large and acquisition cycle and are therefore correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604713A)

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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA.	TION SI	НЕЕТ (К	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NI 060 Eq.	PE NUMBER AND TITLE 0604713A Com Equipment	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	eeding, (Slothing,	and		Р R ОЈЕСТ DC40
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC40 Unit/Organizational Equipment	3003	. 1746	1795	1811	1841	2026	2064	2072	Continuing	2072 Continuing Continuing

maintenance tents will ensure continuous operation and combat readiness of helicopters and vehicles. The Family of Space Heaters replaces unsafe and inefficient space A. Mission Description and Justification: Develop and field soft shelters, showers, latrines and heaters to improve unit sustainability and combat effectiveness. The Force Provider package of tents, laundries, showers, and latrines supports improved soldier quality of life as well as humanitarian aid and disaster relief. Improved heaters and offers new capabilities to heat modern tents. The Laundry Advanced System (LADS) replaces aging M85 Field Laundries on a 1:4 basis.

Acquisition Strategy: Developments transition to procurement.

FY 1996 Accomplishments:

- Completed testing and made production decision on latrines and batch laundry as part of the Force Provider pre-planned product improvement (P31) Completed PQT and type classified the Space Heater - Convective (SHC) to increase safety, reliability and efficiency of field heaters. designed to provide rest and refit facilities in an austere environment.
 - Completed development and type classified the Modular General Purpose Tent System (MGPTS) for Low Rate Initial Production contract.
 - Initiated procurement action second generation LAS prototypes for Technical Testing and Operational Testing (TT/OT). 643 3003
 - Total

FY 1997 Planned Program:

- Award integrated contract for development and procurement of the LADS which includes water recycle capability and eliminates hazardous waste
- For Family of Field Latrines (FOFL), type classify the Force Provider latrine as the Army's follow-on latrine.
 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program 42 1746
 - Total

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Project DC40

Exhibit R-2 (PE 0604713A)



RDT&E BUDGET ITEM JUS	JUSTIFICATION SHEET (R-2 Exhibit)	HS NOI	IEET (R	-2 Exhit	oit)		DATE Feb	February 1997	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	opment	PE NU 090 Equ	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	ITLE ombat Fe	eding, C	lothing,	i	PR DC	PROJECT DC40
 FY 1998 Planned Program: 1000 Conduct DT/OT on LADS prototypes, type classify, and transition to production. 259 Conduct Milestone II decision. Upgrade the NBC Protective Cover for fire protection capability for use in the hospital tent liner. Conduct market search, and award contract for fabric development. 400 Fabricate upgraded frame support system for the MGPTS Pre-planned Production Improvement. 136 Conduct market investigation for the Recon Heater, procure NDI prototypes, and conduct concept evaluation. 	s, type classify, and rade the NBC Prote development. stem for the MGPT Recon Heater, pro	d transition t ective Cover S Pre-plann cure NDI pr	to productior for fire prot ed Productio ototypes, and	t. ection capab m Improverr 1 conduct co	ility for use lent. ncept evalua	in the hosp trion.	ital tent liner.	Conduct ma	rket
 FY 1999 Planned Program: 356 Conduct technical testing on the NBC Protective Cover. 300 Conduct test and evaluation for the MGPTS upgraded frame system and upgraded specification to improve modularity, flooring, and ventilation capability. 355 Conduct technical and operational test and evaluation on the Recon Heater and type classify the performance specification. 200 Conduct market survey for field reproduction and procure NDI prototypes. 150 Conduct market survey for command post equipment and procure NDI prototypes for evaluation. 150 Conduct market survey for Field Pressure Washer and procure NDI prototypes for evaluation. 300 Develop upgraded equipment/sub-components for the Advanced Cloth Reproduction. Total 1811 	C Protective Cover. AGPTS upgraded first and evaluation or oduction and procu oduction at Essure Washer and proments for the Amponents fo	rame system n the Recon re NDI prot nd procure NDI rocure NDI dyanced Ck	and upgrade Heater and ty otypes. IDI prototype prototypes fo	ed specificat ype classify ss for evalua or evaluation etion.	ion to improvithe performstion.	ve modular mce specifi	ity, flooring, a	and ventilatio	-
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1996 4106 4220 -1217	FY		FY 1998 1923	FY 1999 1949	61.6			
FY 1998 Pres Bud Request Change Summary Explanation: Funding - In FY 1996 reduction	was re	I ammed to hig	1746 igher priority	1795 requiremen	1811 ts (-1103).	_			
C. Other Program Funding Summary								То	Total
FY J RDTE, 0603747.DCO9, Unit/Org Equipment 2 OPA 3, M80200, Force Provider 11 OPA 3, M86200, LADS	FY 1996 FY 1997 2126 1289 11892 24981	FY 1998 1955 11633	FY 1999 1737 24188 5401	EY 2000 2025 23390 8334	FY 2001 1989 22956 6822	EY 2002 2033 19839 14284	FY 2003 1564 19876 9938	Compl Cont Cont Cont	Cont Cont
Project DC40	7	Page 3 of 27 Pages	'Pages			Exhibit	Exhibit R-2 (PE 0604713A))4713A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	PROJECT thing, and DC40
D. Schedule Profile FY 1996	FY 1997 FY 1998	FY 1999
Project DC40	Page 4 of 27 Pages	Exhibit R-2 (PE 0604713A)

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RDT&E PROGRAM ELEMENT/	AM EL	EMENT/PR	PROJECT (COST B	REAKD(COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	cturing [Jevelopment		PE NUMBER AND TITLE 0604713A Com Equipment	RAND TITLE 3A Comb ent	at Feedin	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment			PROJECT DC40
A. Project Cost Breakdown			FY 1996		FY 1997	FY 1998	FY 1999			
Primary Hardware Development			3003	•	1704	1795	1811			
SBIR/STTR					42					
Total			3003		1746	1795	1811			
B. Budget Acquisition History and Planning Information	lanning Inf	ormation								
Performing Organizations)									
Contractor or Contract										
t Method/Type	Award or	Performing	Project	Total						
ing	Obligation	Activity	Office	Prior to					Budget to	Total
Activity Vehicle D	<u>Date</u>	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Product Development Organizations										
SSCOM In-House				298	861	429	359	411	Cont	2358
Various	Various			2068	1264	782	947	810	Cont	8871
Foster Miller										
Tech Rsch Grp										
Hunter Mig										
				ć						(
AKU MIPK OGA				67						29
Support and Management Organizations	ions									
SSCOM				915	378	7.1	89	06	Cont	1543
luation										
TECOM/ATC MIPR				2651	200	422	400	200	Cont	4473
CRIC										
SBIR/STTR						42				42
Government Furnished Property: None	ne									
Subtotal Product Development				5395	2125	1211	1306	1221		11258
Subtotal Support and Management				915	378	71	68	06		1543
Subtotal Test and Evaluation				2651	200	464	400	200		4515
Total Project				· 8961	3003	1746	1795	1811		17316
Project DC40			Page	Page 5 of 27 Pages	es		Exhi	Exhibit R-3 (PE 0604713A)	3604713A)	
				780						Item 82
				107						

RDT&E BUDGET ITEM JUST	FEM JUS	TIFICA	TION S	FIFICATION SHEET (R-2 Exhibit)	2-2 Exhil	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Developm	ent	PE NI 060	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	птге Sombat F	eeding, (Slothing,	and]	PROJECT DL40
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DL40 Clothing and Equipment	2094	4851	3684	4330	3592	4476	4865	4889	4889 Continuing Continuing	Continuing

A. Mission Description and Justification: Develop state-of-the-art individual clothing and equipment to improve the effectiveness, sustainability and quality of life of the individual soldier. Funding shown in FY 1996-FY 1998 reflects transfer of funds from DL40 to OSD PE 0604384BP to support the Chemical/Biological Defense program in accordance with Public Law 103-60 Title XVII.

NDI through integrated programs such as Land Warrior, Mounted Warrior, and Air Warrior. Acquisition strategies will vary from: 1) quick fixes in 36 months or less from concept to type classification (TC) such as Soldier Enhancement Programs (SEP); 2) modular improvements which require limited RDT&E and can be completed in more Acquisition Strategy: Soldier Modernization will be accomplished via integrated acquisition programs embodying procurement approaches ranging from NDI/modified than 36 months from concept to TC; and 3) more technically challenging areas of integration and digitization in the Land Warrior program.

FY 1996 Accomplishments:

- Refined requirements based upon Operation Joint Endeavor threat, conducted Design Review, finalized component designs, awarded contract for DT/OT prototypes for Body Armor Set Individual Basic (BASIC) P3I.
 - Conducted mini-test #2 and Design Review, started DT/OT for the Improved Toxological Agent Protective (ITAP) Suit. 887
- Form Integrated Product Team (IPT) for Modular Body Armor (MBA) and Modular Load System (MLS), completed Acquisition Strategy for one contract for both systems, conducted pre-proposal conference with draft request for proposal (RFP), received proposals and completed source 855
- 88 Procured test items and initiated evaluation of the Optional Uniform Fabric. 2094

Total 20

FY 1997 Planned Program:

- Conduct DT/OT, complete assessment reports, obtain Milestone III approval, transition Technical Data Package (TDP) to Defense Personnel Support Center for the BASIC P3I.
- Complete DT/OT and assessment reports, obtain MS III approval, transition to procurement for the ITAP.
- Award single RDTE contract for MBA and MLS, evaluate up to three competing designs in Customer Evaluation and lab testing downselect (using Expert Choice to select up to two competing designs for DT/OT test items), conduct Explosive Ordnance Detachment (EOD) suit domestic/foreign market survey and procure EOD suit prototypes, downselect for prototype test items. 3664
 - Milestone I Decision on the Optional Uniform, procure test item and initiate field test. 86

Project DL40

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Exhibit R-2 (PE 0604713A)



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibi	t) DATE February 1997	1997
вирсет АстіVITY 5 - Engineerin	BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604713A Com Equipment	ΣΤΙΤ∟Ε Combat Feε	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	PROJECT DL40
FY 1997 Planned • 173 • 116 Total 4851	 FY 1997 Planned Program: (continued) 173 Procure prototypes, conduct feasibility evaluation, modify patterns and size tariff, complete technical data and forward to procurement center for integrated sizing of the Battle Dress Uniform. 116 Small Business Innovation Research/Small Business technology Transfer (SBIR/STTR) Program Total 4851 	patterns and size to	niff, complete te IR/STTR) Progr	chnical data and forward to procurement co	enter for
FY 1998 Planned Program:	it a pre-production prove-out of the test items and initiate the DT/OT p design modifications and procure Dress Coat and Trousers, Women's it a market survey, test new material test prototypes, conduct an abbrevi	d MLS. wear test and acce II-Weather Coat (N ins, and initiate test rain approval of St	ptability evaluati fen's and Wome of a Disposable atic Resistant Co	basic p31. of the MBA and MLS. prototypes for a wear test and acceptability evaluation of the Maternity Utility Work Uniform and Coat, Coat, and the All-Weather Coat (Men's and Women's). ls, develop designs, and initiate test of a Disposable Emergency Ensemble. ls, develop designs, and initiate test of a Catic Resistant Cold Weather Clothing, and transition to procurement.	and Coat,
	Complete DT/OT and assessment reports for the MBA and MLS. Conduct a wear test and acceptability evaluation of the Maternity Utility Work Uniform and Coat, Men's Dress Coat and Trousers, Women's Coat, and the All-Weather Coat (Men's and Women's). Modify designs, procure test prototypes, and initiate the DT/OT of the Advanced Combat Uniform. Modify designs, procure test prototypes, complete DT/OT, and obtain Milestone III approval of the Advanced Combat Helmet (ACH) and the Concealable Body Armor. Concealable Body Armor. Complete test of the Disposable Emergency Ensemble, obtain Milestone III approval, and transition to procurement. Develop initial designs, conduct an early user evaluation, and refine designs for Climate Control Equipment (heating and cooling) for the individual soldier.	MLS. ternity Utility Worl I/OT of the Advanand obtain Milesto and obtain Milestone III again Milestone III again no refine designs fa	c Uniform and C ced Combat Unif ne III approval o proval, and trans or Climate Contr	oat, Men's Dress Coat and Trousers, Womorning. Orm. If the Advanced Combat Helmet (ACH) ansition to procurement. ol Equipment (heating and cooling) for the	en's Coat, d the individual
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	Summary FY 1996 145 2145 2005 2205 ropriated Value -111 tequest 2094	FY 1997 4955 4851	FY 1998 3962 3684	FY 1999 4690 4330	
Project DL40	Pag	Page 7 of 27 Pages 791		Exhibit R-2 (PE 0604713A)	Item 82

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	IFICAT	HS NOL	EET (R	-2 Exhik	oit)		DATE Feb	February 1997	76
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopme	ınt	PE NU 090 Equ	PE NUMBER AND TITLE 0604713A Com Equipment	_{IT∟E} ombat Fe	D TITLE Combat Feeding, Clothing, and t	lothing,	and	# O	PROJECT DL40
C. Other Program Funding Summary: RDTE, 0603747.D669, Clothing & Equipment RDTE, 0604384BP.L40, JSLIST RDTE, 0603884BP.IP4, Individual Protection RDTE, 064384BP.IP5, Individual Protection DoD CBDP, MA0400, Protective Clothing OMA, 114092000, Central Funding and Fielding	FY 1996 2533 3108 40565	EY 1997 3347 1937 1184 19677 87739	FY 1998 3339 5768 35245 42405	FY 1999 3374 5250 39788 54222	FY 2000 4113 40628 79734	3640 3640 31499 82242	FY 2002 5799 39029 84025	FY 2003 5172 40600 85848	To Compl . Cont Cont	Total Cost Cont 3108 1937 12202 Cont
D. Schedule Profile 1 Conduct Market Surveys/Design Reviews: Modular Body Armor, and Modular Load Bearing Equipment Conduct Market Surveys/Design Reviews: Advanced Combat/Garrison Uniform, Extreme Cold Weather Clothing System Undergarments Procure test items/initiate DT/OT: Modular Body Armor and Modular Load Bearing Equipment Design modifications of Maternity Uniforms, Men's and Women's Dress Items and All Weather Coats//Test prototypes//Wear test and acceptability evaluation//Reports and Milestone III Market Survey for a Disposable Emergency Ensemble//Material tests and designs//DT and OT//Reports, Milestone III and transition to production	FY 1996 2 3 X*	4	1 X X X X X X X X X X X X X X X X X X X	FY 1997 2 3 (*	- ×	FY 1998 2 3 X X	8 E × ×		FY 1999 2 3 3 X	4 × ×
Project DL40			Page 8 of 27 Pages 792	7 Pages			Exhibi	Exhibit R-2 (PE 0604713A)	(04713A)	Item 82

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE	February 1997	1997
вирдет астіліту 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	g, Clothing, and		PROJECT DL40
D. Schedule Profile FY 1996	FY 1997 FY		FY 1999	4
Cold and and ition to	· ×	· · ×		×
MLS//Reports and type classify Design modifications of the Advanced Combat Uniform//Test prototypes//Start		×	×	×
D I and O I Design modifications of the ACH and Concealable Body Armor//Test prototypes//Phase II DT and OT, MSIII,		×	×	×
transition to production Initial designs of Climate Control Equipment for the individual soldier//Early user evaluation//Design modifications			×	×
* Milestone completed				
		1		
Project DL40	Page 9 of 27 Pages	Exhibit K-2 (Exhibit K-2 (PE 0604713A)	Item 82

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT C	OST BREAK	DOWN (R-3		DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	nbat Feeding	, Clothing, a		PROJECT DL40
A. <u>Project Cost Breakdown</u> Primary Hardware Development SBIR/STTR Total	FY 1996 2094 2094	FY 1997 4735 116 4851	FY 1998 3684 3684	FY 1999 4330 4330		
B. Budget Acquisition History and Planning Information: Not applicable	cable					
Project DL40	Page 1	Page 10 of 27 Pages 794		Exhibit R	Exhibit R-3 (PE 0604713A)	Item 82

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RDT&E BUDGET ITEM JUST	FEM JUS	TIFICA"	TION SI	HEET (R	IIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Developm	ent	PE NI 060 Eq.	PE NUMBER AND TITLE 0604713A Com Equipment	e NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	eeding, (Slothing,	and	a	РРОЈЕСТ D548
COST (in Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D548 Military Subsistence System	802	792	884	1294	1643	1765	1877	1884	1884 Continuing Continuing	Continuing

equipment to enhance soldier efficiency and survivability. New food items and food service equipment will be developed to reduce food service logistics requirements for all missions and operations-other-than-war. Improve equipment to enhance safety in food service, utilize battlefield fuels and decrease fuel and water requirements. Program is reviewed and validated twice annually by the DoD Food and Nutrition Research and Engineering Board as part of the Joint Service DoD Food Program. A. Mission Description and Justification: Engineering and Manufacturing Development (EMD) and Non-Developmental Item (NDI) evaluation of food and food service Support costs of subsistence support for service men and women. Develop multi-fuel, rapidly deployable field food service equipment to support combat, humanitarian four Services. Development of Joint Service Food/Food Service Equipment to improve individual combat effectiveness and reduce logistics burden and Operation and

Acquisition Strategy: Developments transition to procurement

FY 1996 Accomplishments:

•	244	244 Completed technical/operational testing and type classified the Multi-Fuel Burner Unit (MBU) designed to replace the M2 Burner which uses current
		battlefield fuels for safer, more efficient heating in all field kitchen systems.
•	86	Conducted technical and user testing of the Air Force Initial Deployment Kitchen and transitioned Technical Data Package (TDP) to procurement to
		increase mission responsiveness and improve customer satisfaction by means of an all-electric, rapidly deployable, all-climate feeding system.
•	460	460 Fabricated test prototypes and initiated Development Testing/Early User Test and Evaluation (DT/EUT&E) on the Containerized Kitchen to increase
		flexibility and efficiency of future field feeding system.
Total	802	

FY 1997 Planned Program:

Project D548

795

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Exhibit R-2 (PE 0604713A)

	RDT&E BUDGET ITEM JUST	TSUL ME	IFICAT	ION SH	IIFICATION SHEET (R-2 Exhibit)	-2 Exhit	oit)		DATE Feb	February 1997	266
BUDGET ACTIVITY 5 - Engineering	вирсет Астіуітү 5 - Engineering and Manufacturing Development	elopme	ınt	PE NU 060 , Equ	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	π∟E ombat F(eeding, (Slothing,	and		PROJECT D548
FY 1998 Planned Program:	ogram: Design/fabricate vented components and equipment to remove combustion by-products of the MBU. Develop component efficiency upgrades for field kitchen Improved Heat and Serve Ration Heater. Conduct field evaluations for improvements to the MKT. Conduct in-house development of the Tilt Griddle/Deep Fat Fryer to improve operational effectiveness/ performance of field kitchens.	onents and eq upgrades for mprovements of the Tilt G	uipment to refield kitchen to the MKT riddle/Deep	emove com n Improved Fat Fryer to	bustion by-p Heat and Se o improve og	oroducts of tl erve Ration I perational ef	he MBU. Heater. fectiveness/	performanc	e of field kitc	shens.	
FY 1999 Planned Program: • 230 Conduc • 400 Comple • 380 Fabrica • 123 Fabrica • 161 Conduc Total 1294	ogram: Conduct technical and user testing and transition the TDP for vented Army field feeding equipment for use with the MBU. Complete technical and user testing of the Rapid Deployment Kitchen and transition TDP to procurement. Fabricate prototypes and begin DT/OT of the Thermal Powered Washer for the Food Sanitation Center. Fabricate prototype and initiate testing of Tilt Griddle/ Deep Fat Fryer. Conduct market survey and develop prototype for modification of existing Army equipment for the Containerized Ice Maker.	ting and trans sting of the l DT/OT of th testing of Ti	ition the TD Rapid Deploy e Thermal P. It Griddle/ D pe for modif	P for venteryment Kitch owered Wa leep Fat Fry ication of e	d Army field hen and trans sher for the] er. xisting Army	l feeding equ sition TDP to Food Sanital y equipment	uipment for a procureme tion Center.	use with the int. tainerized Io	: MBU. ce Maker.		
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustment to Appropriated Value FY 1998 /Pres Bud Request	Sudget Budget priated Value equest		FY 1996 823 844 -42 802	FY	EY 1997 809 792 792	FY 1998 938 884	FY 1999 1388 1294	99 88 4 4			
C. Other Program Funding Summary RDTE, 0603747.D610, Food Adv Dev OPA 3, M86400, Kitchen, Containerized OPA 3, MA8050, Items Less Than \$2.0N FOLIMPER 1821	C. Other Program Funding Summary RDTE, 0603747.D610, Food Adv Dev OPA 3, M86400, Kitchen, Containerized, Field OPA 3, MA8050, Items Less Than \$2.0M (CSS-	FY 1996 2050 901	FX 1997 1905 872	<u>FY 1998</u> 2263 154	FY 1999 2569 7626 240	FY 2000 3097 7429 392	FY 2001 3342 7502 1053	FY 2002 3744 6033 1991	EY 2003 3761 10823 1992	To Compl Cont Cont Cont	Total Cost Cont Cont Cont
OPA 3, M66500, San	OPA 3, M66500, Sanitation Center, Field Feeding	685	664			969	3349	1934	1938	Cont	Cont
Project D548			P	Page 12 of 27 Pages	'7 Pages			Exhibi	Exhibit R-2 (PE 0604713A)	304713A)	

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RDT&E BUDGET	ITEM JUS	CATION	TIFICATION SHEET (R-2	(R-2 Exhibit)		DATE	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ring Development		PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	bat Feed	ing, Cloth	ing, and		РРОЈЕСТ D548
D. Schedule Profile	FY 1996		FY 1997	-	FY 1998	-	FY 1999	4
Complete DT/OT of MBU Type Classify MBU Conducted DT/OT of Initial Deployment Kitchen (IDK) Transition TDP of IDK to procurement Conduct DT/OT of Containerized Field Kitchen Type Classify Containerized Field Kitchen Test MKT prototypes Complete fabrication of vented equipment for MBU Transition TDP of vented MBU equipment Transition RDK to procurement *Milestone completed	n	- + * *	n	-		××		t
Project D548		Page	Page 13 of 27 Pages			xhibit R-2 (Exhibit R-2 (PE 0604713A)	
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RDT&E PROGRAM ELEMENT/PROJECT		SOST BI	ZEAKD	COST BREAKDOWN (R-3)	3)	DATE F	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604713A Com Equipment	AND TITLE SA Combent	at Feedin	D TITLE Combat Feeding, Clothing, and t			РRОЈЕСТ D548
A. Project Cost Breakdown Primary Hardware Development	FY 1996 802	FY	FY 1997 773	FY 1998 884	<u>FY 1999</u> 1294	Q1		
Total	803		19 792	884	1294	_		
B. Budget Acquisition History and Planning Information								
Organizations r Contract								
nent Method/Type Award or Performing ing or Funding Obligation Activity	Project Office	Total Prior to)001 XH	i co		, , , , , , , , , , , , , , , , , , ,	Budget to	Total
Activity Venicle Date EAC Product Development Organizations	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
MC In-House		5459	312	281	312	710	Cont	7074
GIS Various Various		19	250	200	328	120	Cont	656
ATCOM MIPR		35						35
Support and Management Organizations SSCOM		365	40	40	44	64	Cont	553
Test and Evaluation Organizations				,	•)
TECOM/ATC SBIR/STTR		1162	200	252	200	400	Cont	2214
Government Furnished Property: None								
Subtotal Product Development		5555	562	481	640	830		8908
Subtotal Support and Management Subtotal Test and Evaluation		365	40	40	44	64		553
Total Project		7082	802	792	884	1294		10854

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SI	HEET (R	-2 Exhi	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 5 - Engineering	вирдет астіvіту 5 - Engineering and Manufacturing Developm	Jevelopm	nent	PE NI 060 Eqt	PE NUMBER AND TITLE 0604713A Com Equipment	nπ∟E Sombat F	eeding, (PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	and	a u	РRОЈЕСТ D667
O	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D667 Land Warrior		0	47893	33031	16965	7664	8892	11204	9388	Continuing	Continuing
A. Mission Description Soldier's battlefield combat effective systimtegrated headgear verigital compass, vide	A. Mission Description and Justification: Land Warrior (LW) is an integrated fighting system for dismounted combat soldiers. The LW program will enhance the soldier's battlefield capabilities through the development and integration of an assortment of Army systems/components and technologies into a cohesive, timely, and combat effective system. These systems/components include an integrated individual soldier computer/radio, enhancements to protective clothing and individual equipn integrated headgear with helmet mounted display and image intensifier, and modular weapon system with thermal weapon sight, infrared aiming light, laser rangefinder, digital compass, video camera, and close combat optic. LW will bring the dismounted soldier into the digital battlefield.	Warrior (LW) ment and inte ts include an id image inter tic. LW will	is an integragation of a integrated in integrated in isifier, and repring the dis	ated fighting n assortment dividual solt nodular weatmounted so	is an integrated fighting system for dismounted comba egration of an assortment of Army systems/components integrated individual soldier computer/radio, enhancem nsifier, and modular weapon system with thermal weap bring the dismounted soldier into the digital battlefield.	dismounted of stems/compar/radio, enhabith thermal digital battl	combat sold. onents and to ancements to weapon sig.	iers. The LV echnologies o protective ht, infrared a	V program w into a cohesi clothing and timing light,) is an integrated fighting system for dismounted combat soldiers. The LW program will enhance the egration of an assortment of Army systems/components and technologies into a cohesive, timely, and integrated individual soldier computer/radio, enhancements to protective clothing and individual equipment, ansifier, and modular weapon system with thermal weapon sight, infrared aiming light, laser rangefinder, bring the dismounted soldier into the digital battlefield.	nd nd puipment, nder,
Acquisition Strategy requirement deficience Integrated Product Te procurement.	Acquisition Strategy: The LW Engineering and Manufacturing Development (EMD) program is designed to field currently existing/mature technologies to meet soldier requirement deficiencies. The Force XXI Land Warrior program will be developing advanced technology components for insertion into the LW consolidated program. An Integrated Product Team (IPT) was formed to determine which technologies from the S&T program will be integrated into the LW program. LW EMD transitions to procurement.	lanufacturing rrior program nine which te	Developme will be deve chnologies	nt (EMD) pr eloping adva from the S&	ogram is des inced techno T program v	igned to fiel logy compor	ld currently onents for instated into the	existing/mat ertion into th LW prograu	ure technolog ne LW conso m. LW EMI	s Development (EMD) program is designed to field currently existing/mature technologies to meet so a will be developing advanced technology components for insertion into the LW consolidated program echnologies from the S&T program will be integrated into the LW program. LW EMD transitions to	oldier am. An o
FY 1996 Accomplis	FY 1996 Accomplishments: Funded in RDTE PE 0603001.DJ50, Force XXI Soldier	0603001.DJ	0, Force X	«I Soldier							
FY 1997 Planned Program:	rogram: Fabricate LW prototypes for Development Testing (DT) and procure long lead items for Initial Operational Test and Evaluation (IOTE). Conduct LW contractor and government testing, and prepare test support package. Fix deficiencies resulting from Early Operational Exercise (EOE) and contractor testing, finalize LW hardware/software design/integrati	Development sovernment te n Early Oper	Testing (D1 sting, and prational Exer	Γ) and procu repare test sı cise (EOE) a	re long lead upport packa ınd contractc	items for Ini ge. r testing, fin	itial Operatio Ialize LW ha	onal Test and irdware/soft	1 Evaluation yare design//	t Testing (DT) and procure long lead items for Initial Operational Test and Evaluation (IOTE). esting, and prepare test support package. rational Exercise (EOE) and contractor testing, finalize LW hardware/software design/integration, and	pu
• 12193	conduct independent verification and validation (IV&V) of software. Ensure contractor and government compliance with Army Technical Architecture. Implement LW functional plans: Integrated Logistics Support (ILS), configuration management, etc., publish LW draft system manuals; and conduct maintenance training in preparation for Logistics Demo.	tion and valic uns: Integrate tration for Lo	ation (IV&V d Logistics Sigistics Demo	&V) of softwares Support (ILS	S), configuration management, etc., publish LW dra	ontractor and tion manage	d governmer ment, etc., p	at complianc sublish LW c	e with Army lraft system	r Technical manuals; and	conduct

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Initial program management and engineering support for other government agencies to provide studies and market surveys for the Mounted Warrior Program Management, Government and contractor engineering support, from other government agencies to provide oversight of contractor effort.

Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program

HQ and BASOPS support.

2383 1169 47893

Project D667

Total

program.

6403 500

1600

Technical Insertion Integrated Product Team (IPT) activities between LW and Force XXI LW efforts (PE 0603001A).

Exhibit R-2 (PE 0604713A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibi	t) DATE	E February 1997
BUDGET ACTIVITY 5 - Engineering	вироет астіvіту 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604713A Com Equipment	отп∟е Combat Fe ¢ t	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	
FY 1998 Planned Program: • 7431 Contrac compliants • 6283 Fabrica	rogram: Contractor program management, complete Production Qualification Test (PQT) (C); fix deficiencies, and conduct IV&V of software. Ensure system compliance with Army Technical Architecture. Fabricate and deliver prototypes for POT (G) and Initial Operational Test and Evaluation (IOTE) and to support Early User Test (EUT) which is Force)ualification Test (Po Operational Test and	QT) (C); fix defu	ciencies, and conduct IV \mathscr{E}^{N}	V of software. Ensure system ser Test (EUT) which is Force
9403	XXI LW demo. Procure IOTE items and supplies. Conduct PQT(G), logistics demo, IOTE training, and conduct IOTE Government participation (IPT) for Design and Development and Technical Insertion Integrated Product Team (IPT) activities between LW and Force	nduct IOTE ment and Technical I	Insertion Integrat	ed Product Team (IPT) act	ivities between LW and Force
• 4914 • 3303 Total 33031	Program management and engineering support from other government agencies to provide oversight of contractor effort. Write specifications for LW production contract HQ and BASOPS support.	ır government agenc	ies to provide ov	ersight of contractor effort.	. Write specifications for LW
FY 1999 Planned Program: • 10447 Contrac Archite • 3125 Program	rogram: Contractor program management, fix deficiencies from IOTE, and conduct IV&V of software. Ensure system compliance with Army Technical Architecture. Program Management and engineering support from other government agencies to provide oversight of contractor effort. Conduct technical and program reviews (FCA, PCA, and PRR) and briefings to achieve MS III. Develop/coordinate documentation of release of RFP and conduct SSEB to	OTE, and conduct IN ar government agenc achieve MS III. Dev	V&V of software ies to provide ov velop/coordinate	. Ensure system compliancersight of contractor effort documentation of release of	e with Army Technical . Conduct technical and of RFP and conduct SSEB to
• 1697 • 1696 Total 16965	award production contract. Government participation (IPT) for design and development and Technical Insertion Integrated Product Team (IPT) activities between LW and Force XXI LW efforts (PE 0603001A). HQ and BASOPS support.	ent and Technical In	isertion Integrate	d Product Team (IPT) activ	vities between LW and Force
B. Program Change Summary FY 1997 Presidents Budget Appropriated Value Adiustment to Appropriated Value	E Summary Budget 0	FY 1997 48917 47893	FY 1998 37616	<u>FY 1999</u> 20354	
FY 1998 Pres Request	st	47893	33031	16965	
Project D667	P	Page 16 of 27 Pages		Exhibit R-2	Exhibit R-2 (PE 0604713A)
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RDT&E BUDGET ITEM JUS		IFICAT	ION SH	TIFICATION SHEET (R-2 Exhibit)	2 Exhik	oit)		DATE Feb	February 1997	76
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	evelopme	ent	PE NUN 0604 Equi	PE NUMBER AND TITLE 0604713A Com Equipment	⊤∟E ombat Fe	D ТITLE Combat Feeding, Clothing, and t	lothing,	and	# O	PROJECT D667
C. Other Program Funding Summary RDTE, 0603001.DJ50, Force XXI Land Warrior OPA 3, M80500, Land Warrior OPA 4, MS3610, Initial Spares-Land Warrior	FY 1996 30548	<u>FY 1997</u> 15936	<u>EY 1998</u> 11298	FY 1999 7016 66206	FY 2000 6423 94486 215	FY 2001 6434 104601 251	FY 2002 7669 24089 270	FY 2003 7997 119101 268	To Compl Cont Cont Cont	Total Cost Cont Cont
WTCV, GB3007, M4 Carbine Mods WTCV GZ2800 M16 Rifle Mods	900 2751	2114 5526	2152 7603	5318 7060	5640					16124 22940
D. Schedule Profile	FY 1996	~	1 7	FY 1997	-	FY 1998	~ ~	- - -	FY 1999	7
Early Operational Experimentation (EOE) Hardware Preliminary Design Review · (PDR) LW Software Design Review and Mock- ups	* *	-)	•	1				-
EOE Hardware Critical Design Review (CDR)	*		*							
LW Hardware PDR LW CDR Fabricate/Deliver DT prototypes			×	×	×					
Contractor Production Qualification Test Government Production Qualification Test					××	>				
Logistics Demonstration Fabricate/Deliver OT items IOTE Training						< ×	×			
IOTE Early User Test Milestone III/Production Award							××	×		
*Milestone completed										
Project D667		Р	Page 17 of 27 Pages	7 Pages			Exhibit	Exhibit R-2 (PE 0604713A)	04713A)	

RD	RDT&E PROGRAM ELEMENT/I	GRAN	IEEE	MENT/PR	OJECT (SOST BI	REAKDO	PROJECT COST BREAKDOWN (R-3)	3)	DATE F	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ig and Manı	ufactur	ing D	evelopment	,	PE NUMBER AND TITLE 0604713A Com Equipment	AND TITLE SA Comb ent	at Feeding	этіть Combat Feeding, Clothing, and t			РКОЈЕСТ D667
A. Project Cost Breakdown System Engineering and Program Management System Test and Evaluation Prototype Development and Manufacturing Other RDTE Costs SBIR/STTR Total	reakdown g and Program Maluation nent and Manuf	// Aanagem facturing	ent		EY 1996	FY 33 , 44 ,	FY 1997 4434 1476 37262 3552 1169 47893	EY 1998 3795 7600 18333 3303	FY 1999 2325 1669 11275 1696			
B. Budget Acquisition History and Planning Information:	ition History an	nd Planni	ing Info	rmation:								
Performing Organizations Contractor or Contra Government Metho Performing or Fur Activity Vehic	izations Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	d or ation	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Froduct Development Organizations Hughes CPIF J	CPIF MIPR	Jul 95				244		40860	21681	13267	Cont	76052
CECOM TACOM (PM-SA) ARL SIBR/STTR	MIPR MIPR MIPR							1169				1169
Support and Management Organizations SSCOM FAD In-House	agement Organ FAD	izations				252		4388	3750	2029	Cont	10419
Modern Tech Corp Task Order Test and Evaluation Organizations ARL-SLAD MIPR OPTEC MIPR	Task Order On Organization MIPR	Su						1476	7600	1669	Cont	10745
TECOM AMSAA IV&V Contractor	MIPR MIPR Task Order											
Project D667					Page	Page 18 of 27 Pages	ges		Exh	Exhibit R-3 (PE 0604713A)	0604713A)	,
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RDT&E PROGRAM ELEMENT/PROJEC	PROJECT COST BREAKDOWN (R-3)	KDOWN (R-	3)	DATE Fe	February 1997	197
вирсет АстіVіTY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	^{LE} mbat Feedin	g, Clothing	j, and		РКОЈЕСТ D667
Government Furnished Property: None						
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	Total Prior to FY 1996 EY 1996 244 252		EY 1998 21681 3750 7600	EY 1999 13267 2029 1669	Budget to Complete	Total Program 77221 10419 10745
Total Project	496	47893	33031	16965		98385
Project D667	Page 19 of 27 Pages		Exhi	Exhibit R-3 (PE 0604713A)	0604713A)	
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	k-2 Exhi	bit)		DATE Fel	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NI 060 Eqt	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	गात्रE Sombat F	eeding, (Clothing,	and		Р R ОЈЕСТ D668
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D668 Soldier Enhancement Program	10150	21146	14563	14645	14706	14706	14517	14600	14600 Continuing Continuing	Continuing

mobility, and survivability of the soldier through accelerated acquisition of lighter, more lethal weapons and improved "soldier items" including lighter, more comfortable A. Mission Description and Justification: The objective of the Soldier Enhancement Program (SEP) is to increase the lethality, command and control, sustainability, load-bearing equipment, field gear, survivability items, communications equipment, and navigation aids. For SEP purposes, soldiers are managed in three categories: dismounted soldiers, combat crews (air and ground), and other soldiers. Projects generally take three years to complete.

technologically challenging requiring more than three years development are pursued under the appropriate system area. SEP items are reviewed and approved for Acquisition Strategy: SEP procurement consists of Non-Developmental Items (NDI) or modified NDI that can be fielded in three years or less. Items that are development one year and begin development during the next year. Procurement varies by appropriation.

FY 1996 Accomplishments:

- Flash Suppresser/Blast Attenuator, Miniature Binoculars, Portable Periscope, Improved Butt Pack, Improved Rain Suit, Small Unit Shower, Mounted Completed development/type classification: 40mm IR Illumination Round, HMMWV Mount, Medium Machine Gun, Close Combat Optics, M24 Crewman Boot, Improved Personnel Armor System Ground Troops (PASGT) Helmet Suspension, Inconspicuous Body Armor, Fighting Position Continued development/procured prototypes and/or tested: Modular Weapon System, Surveillance Battle Damage Assessment (BDA) Device, Excavator, Soldier Fighting Cover, Armor Crew/Infantry Mask, and Selectable Lightweight Attack Munitions. 5119
 - Machine Gun Optics, XM84 Stun Hand Grenade II, M203 for the M4 Carbine, Lightweight Chemical Overgarment, Improved Chemical/Biological Glove, Combat Medic Vest, Improved Flotation Device, Small Unit Shower, Fighting Position Revetment Kit, Enhanced Incendiary Grenade, and Individual Soldier Radio.
- Initiated market surveys and developed: Commercial Boot Survey, Midsize Riot Control Disperser, Non-Lethal 40mm Grenade, Shin/Knee Guards for Riot Control, Anti-Reflection Device, Compression Sack, and Non-Lethal 5.56mm Cartridge and M249 Feed Tray Cover. 1874
 - 972 Program Management and in-house efforts.
- Terminated: Lightweight Leader Computer, 40MM Smoke Projectile and Individual Sand Bagging Accessory 515

otal 10150

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Project D668

Exhibit R-2 (PE 0604713A)



	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1997
BUDGET ACTIVITY 5 - Engineering	вирвет Астіvіту 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	
FY 1997 Planned Program: • 6221 Compl	ogram: Complete development/type classify: Modular Weapon System, M203 for the M4 Carbine, Surveillance BDA Device, Machine Gun Optics, XM84 Stun Hand Grenade II, M249 Feed Tray Cover, M4 Improved Buttstock, Lightweight Chemical Overgarment, Improved Chemical/Biological Glove,	stem, M203 for the M4 Carbine, Surveillance BDA Deviced Buttstock, Lightweight Chemical Overgarment, Impro	se, Machine Gun Optics, XM84
• 4948	Shin/Khee Guards for Klot Control, Combat Medic Vest, Compression Sack, Improved Flotation Device, Small Unit Shower, Midsize Riot Control Disperser, Individual Soldier Radio and Fighting Position Revetment Kit. Continue development/procure prototypes and/or test: Non Lethal 40MM Grenade, Non-Lethal 5.56MM Cartridge, Enhanced Incendiary Grenade and Anti-Reflection Device.	ompression Sack, improved Flotation Device, Small Unit evetment Kit. Lethal 40MM Grenade, Non-Lethal 5.56MM Cartridge,	Shower, Midsize Riot Control Enhanced Incendiary Grenade
• 7466	or developme for the M4 C2 trol, 40mm F Shin Guards, for Weather I nade, and B12 nade, and B12	nt: Heavy Sniper Weapon System, M249 Flexmount, Weapon Flashlight, Back-up Iron Sight for M4/M16, arbine, Shoulder Holster for 9mm Pistol (Left/Right Handed), Boresight Device for PAQ4, 12 Gauge Non-ligh Velocity Canister Cartridge, Blast Protective Boots, Elbow and Knee Pads for BDU, On the Move Pistol Belt Extender, Improved Underlying Insulating Layers for Extended Cold Weather Clothing System 30ot, Extreme Cold Weather Boot, Ballistic/Non-Ballistic Face and Body Shield, Fuel Bar, Handheld acklight.	Sack-up Iron Sight for M4/M16, vice for PAQ4, 12 Gauge Nonads for BDU, On the Move Cold Weather Clothing System hield, Fuel Bar, Handheld
• 30 • 1980 • 501 Total 21146	Terminated: Canteen Cup Cooler Program management and in-house efforts. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program	ology Transfer (SBIR/STTR) Program	
FY 1998 Planned Program: • 3076 Comple Sling fo Ballisti	ogram: Complete development/type classify: Anti-Reflection Device, M249 Flexmount, M4 Improved Buttstock, Weapon Flashlight, Close Quarters Battle Sling for the M4 Carbine, Back-up Iron Sight for M4/M16, Blast Protective Boots, Elbow and Knee Pads for BDU, On the Move Hydration System, Ballistic Shin Guards, Pistol Belt Extender, Improved Underlaying Insulating Layers for ECWCS, Alternate Wear Hot Weather Boot, Extreme Cold Weather Boot, Ballistic/Non-Ballistic Face and Body Shield, Fuel Bar, Low Profile Flotation Collar, Emergency Breathing Device, and Enhanced Incendian, Grande	ce, M249 Flexmount, M4 Improved Buttstock, Weapon F Blast Protective Boots, Elbow and Knee Pads for BDU, Claying Insulating Layers for ECWCS, Alternate Wear Hc, Fuel Bar, Low Profile Flotation Collar, Emergency Brea	lashlight, Close Quarters Battle On the Move Hydration System, ot Weather Boot, Extreme Cold athing Device, and Enhanced
• 4275 • 5862 • 1350 Total 14563	ant/procure prototypes m High Velocity Can ys/development on ne rt and in-house efforts	and/or test: Heavy Sniper Weapon System, Boresight Device for PAQ4, 12 Gauge Non-Lethal Point and ister Cartridge, Physical Fitness Uniform, Handheld Infrared Flare/Smoke, Grenade and Blacklight. witems, in the process of approval, to begin development in FY 1998.	2 Gauge Non-Lethal Point and Grenade and Blacklight.
Project D668	Page	Page 21 of 27 Pages Exhibit	Exhibit R-2 (PE 0604713A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUST	FICATION	HS NC	ET (R-	2 Exhib	ŧ.		DATE Feb	February 1997	76
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	lopmen	ıt	PE NUM 0604' Equi	PE NUMBER AND TITLE 0604713A Com Equipment	r∟E ombat Fe	отіть Combat Feeding, Clothing, and t	lothing,		F. O	РRОЈЕСТ D668
 FY 1999 Planned Program: 2076 Complete development/type classify: Heavy Sniper Weapon System, Boresight Device for PAQ4, 12 Gauge Non-Lethal Point and Crowd Control, 40mm High Velocity Canister Cartridge, Physical Fitness Uniform, Handheld Infrared Flare/Smoke Grenade and Blacklight 6148 Continue development/procure prototypes and /or test projects for which market surveys/development commenced in FY 1998. 5071 Initiate market surveys/development on new items to commence in FY 1999. 1350 Program management and in-house efforts. Total 14645 	y: Heavy ridge, Phy totypes an nt on new it efforts.	Sniper Weag sical Fitness d /or test pro items to com	oon System, Uniform, H jects for wh mence in F	, Boresight] landheld Inf iich market Y 1999.	Device for F frared Flare/ surveys/dev	AQ4, 12 Ge Smoke Grer elopment co	uge Non-Le nade and Ble mmenced is	thal Point ar icklight 1 FY 1998.	d Crowd Cc	ntrol,
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 10398 10690	FY 1997 21598 21146		FY 1998 20743	FY 1999 35368	8 8			
FY 1998 Pres Bud Request		10150	21]	21146	14563	14645	5			
Change Summary Explanation: FY1998 and FY1999 funding reprogrammed to support higher priority requirements.	ding repro	grammed to	support hig	her priority	requiremen	ts.				
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total Cost
OPA 3, MA6800, Soldier Enhancement	03.60		1709	7157	8532	5815	3963	3971	Cont	Cont
WTCV, GC0076, Sinail Allins (SEF) WTCV, GZ1290, Squad Automatic Weapon (MODS)	7330	6000	41/0	0220	8874	11605	8468	7877	Cont	Cont
WTCV, GZ2800, M16 Rifle Mods	2751	5526	7603	7060	04.70					23023
WICV, GB3007, M4 Carome Mods WTCV, GZ1300, MG Mods	900 6292	0117	7517	3318	3040					6292
WTCV, GL3200, Items Less Than 2M	899	1007		707	9,01					1676
W.I.C.V, GC0925, Mods PAA, F47500, 7,62mm AP	3944	9661 1998	1413	1979	1708	0971				6146 9915
PAA, F47600, 5.56mm AP	1655	8661	1976	1979	1979	1980	1985	1990	Cont	Cont
PAA, F00900, 40mm Canister ODA 2, BA 5200, Soldier Enhancement (C/E)			1003	7496	6487	0824	7075	6000	Ç	6000
OPA 2. K30800, LVRS	2314	2592	2483	3477	4179	1293	1488	1492	Cont	Cont
OMA, 114092000, Central Funding and Fielding	40565	87739	42405	54222	79734	82242	84025	85848	Cont	Cont
Project D668		Pa	Page 22 of 27 Pages	Pages			Exhibit	Exhibit R-2 (PE 0604713A)	04713A)	
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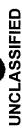




RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit) DATE February 1997	y 1997
вирсет Астіvіту 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	PROJECT D668
	Y 1997 FY 1998	
SEP Requirements Reviews X* X* SEP Projects Reviews X* X*	x x x x x x x x x x x x x x x x x x x	4
*Milestone completed		
Note: Numerous individual projects are ongoing under the Soldier Enhancement Program (SEP) and each project has its own milestone schedule.	t Program (SEP) and each project has its own milestone schedule.	
Project D668	Page 23 of 27 Pages Exhibit R-2 (PE 0604713A)	A)
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ECT COST	BREAKD	DWN (R-3)		DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUME 06047 Equip	PE NUMBER AND TITLE 0604713A Comb Equipment	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	Clothing,	and	PROJECT D668
A. Project Cost Breakdown Soldier Enhancement Program SBIR/STTR Total	FY 1996 10150 10150	FY 1997 20645 501 21146	<u>FY 1998</u> 14563 14563	FY 1999 14645 14645		
B. Budget Acquisition History and Planning Information: Not applicable	ole					
Project D668	Page 24 of 27 Pages	Pages		Exhibit	Exhibit R-3 (PE 0604713A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (R	2 Exhi	bit)		DATE FeI	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE NI 060	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	птге Sombat F	eeding, (Clothing,	and	L	РРОЈЕСТ D680
			h_	arpinent						
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D680 Mounted Warrior	0	0	2007	4494	2501	0	0	0	0	8992

his ability to perform mission functions. Consideration will be given to optimizing the balance between vehicle mounted and crewman mounted equipment and designing The physical burden imposed by cumbersome personal equipment can degrade a crewman's effectiveness by increasing rates of fatigue, reducing mobility and restricting tetherless communications, increased laser eye protection, maximum individual protection from nuclear, biological and chemical (NBC) contaminations, spall, flame and A. Mission Description and Justification: Mounted Warrior (MW) is an integrated modular system that will enhance the combat crewman's fighting capabilities. The MW system will be used by a wide variety of combat crewmen and will be tailored based on Mission, Enemy, Terrain/Weather, Troops Available and Time (METT-T). an overall system that will improve the crewman's endurance, safety, mission performance and crewman/vehicle interface. The MW system will provide hands free, heat, and will provide for better performance of crew tasks without reducing tactility and agility.

Acquisition Strategy. The MW program is designed to field currently existing/mature technologies to meet the needs of the Combat Vehicle Crewman (CVC).

FY 1996 Accomplishments: Project not funded in FY 96

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program:

- Complete source selection and award contract for MW program integration.
- Identify existing and mature technologies for MW system design. Ensure contractor and government compliance with Army Technical Architecture. 6901
 - 500 Conduct early operational evaluation (EOE) of components.
- 188 Program management and government oversight of contractor effort.
 - Total 2007

FY 1999 Planned Program:

- 540 Fabricate MW prototypes for Developmental Testing (DT).
- 360 Program management and government oversight of contractor effort.
- Conduct MW DT (contractor and government testing) and prepare test support package. 0001
- Fix deficiencies, finalize MW hardware/software design/integration, and conduct independent verification and validation of software.

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Exhibit R-2 (PE 0604713A)

RDT&E BUDGET ITEM JUST	LEM JUSTIFICATIO	IFICATION SHEET (R-2 Exhibit)	-2 Exhib	it)	DATE Feb	February 1997	_
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Development	PE NUMBER AND TITLE 0604713A Com Equipment	пт.е combat Fe	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment		PR(РРОЈЕСТ D680
FY 1999 Planned Program: (continued) • 1000 Implement MW functional plans: integrated lo maintenance training in preparation for the Log • 194 Procurement of MW long lead items for IOTE Total 4494	ogram: (continued) Implement MW functional plans: integrated logistics support (ILS), maintenance training in preparation for the Logistics Demonstration. Procurement of MW long lead items for IOTE.	ort (ILS), configurat nstration.	ion managem	logistics support (ILS), configuration management, etc.; publish MW draft system manuals; and conduct ogistics Demonstration. E.	/ draft system m	nanuals; and o	onduct
B. Project Change Summary FY1997 President Budget Appropriated Value	FY 1996 0	FY 1997 0	FY 1998 0	FY 1999 0			
Adjustments to Appropriated Value FY 1998 Pres Bud Request	0	0	2007	4494			
Change Summary Explanation: Funding - Project is a new start in		FY 1998 (+2007), FY 1999 increased (+4494) to continue.	sed (+4494)	to continue.			
C. Other Program Funding Summary	FY 1996 FY 1997 FY	FY 1998 FY 1999	FY 2000	FY 2001 FY 2002	2 FY 2003	To	Total
OPA 3, M80600, Mounted Warrior				997 2491	1 4491	Cont	Cont
D. Schedule Profile	FY 1996 2 3 4 1	FY 1997 2 3	4	FY 1998 2 3 4	,	FY 1999 2 3	4
MS 0 Trade-off determination Operational Requirements Document Approval Milestone I/II Development contract award Early operational evaluation components Fabricate MW prototypes for DT Conduct MW DT Procure MW long lead items for IOTE *Milestone completed	· *	· × ×	× .		×		
Project D680	Pag	Page 26 of 27 Pages		Exh	Exhibit R-2 (PE 0604713A)	04713A)	
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RDT&E PROGRAM ELEMENT/PROJ	ECT C	PROJECT COST BREAKDOWN (R-3)	AKDO	WN (R-:	(E)	DATE F.	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	<u>a</u> 0 u	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing, and Equipment	O TITLE Comba	t Feeding	J, Clothing			РRОЈЕСТ D680
A. Project Cost Breakdown Program Management System Engineering System Test and Evaluation Develop and Manufacture Prototypes Other RDTE	FY 1996	FY 1997		FY 1998 188 1069 500 250 2007	FY 1999 360 2400 1000 734 4494			
equisitio Organiza								
Contractor or Contract Government Method/Type Award or Performing Pr Performing or Funding Obligation Activity O Activity Vehicle Date EAC Product Development Organizations	Project Office I <u>EAC</u> F	Total Prior to FY 1996 FY	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Contractor-TBD CPIF Oct 98 RDEC SPT MIPR Spt Contractor Task Order					869 200 250	2234 400 1000	Cont	3103 600 1250
Support and transferrent Organizations PM Soldier In-House Test and Evaluation Organizations					188	360		548
OPTEC MIPR TECOM MIPR					150 350	350 150	Cont	500
Government Furnished Property: None Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation					1319	3634		4953
Total Project					2007	4494		6501
Project D680	Page 27	Page 27 of 27 Pages 811			Exhib	oit R-3 (PE	Exhibit R-3 (PE 0604713A)	Item 82

RDT&E BUDGET ITEM JUS	EM JUS		TION SI	HEET (R	IIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Jevelopm	ent	PE NU 060 Enç	PE NUMBER AND TITLE 0604715A Non-Engineering Dev	re NUMBER AND TITLE 0604715A Non-System Tr Engineering Development	PE NUMBER AND TITLE 0604715A Non-System Training Devices - Engineering Development	ing Devic	- sə:		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	50140	48788	76749	73048	65533	46932	47560	57057	Continuing	Continuing
DC82 Louisiana Maneuvers	1525	0	0	0	0	0	0	0	0	10030
DC91 Distributive Interactive Simulation	7985	0	0	0	0	0	0	0	0	9345
D241 Non-System Training Devices	28996	35951	60512	57306	49309	30811	26222	39600	Continuing	Continuing
D396 Tactical Simulation (TIARA)	1975	2722	5995	5047	4765	4494	5963	6357	Continuing	Continuing
D573 STRICOM and Naval Air Warfare Center Training Systems Division (NAWCTSD)	9659	10115	10572	10695	11459	11627	15375	11100	Continuing	Continuing

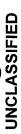
training while helping to control rapidly escalating costs. Training devices maximize the transfer of knowledge, skills and experience from the training situation to a combat both training [intelligence driver for Corps Battle Simulation (CBS) and Warfighter Simulation 2000 (WARSIM)] and testing. Project D573, STRICOM/Naval Air Warfare realistic collective training in low, mid, and high intensity scenarios. Project DC82, Louisiana Maneuvers, was intended to energize and guide the restructuring of the Army training at the Combat Training Centers (CTC), general military training and training on more than one item/system, as compared with system devices which are developed Combined Arms, develops simulation training devices for Army-wide use, including the CTCs. Project D396, Tactical Simulation, is an intelligence simulation/driver for in support of a specific item/weapon system. Training devices and training simulations provide force multipliers that improve combat effectiveness by providing realistic (STRICOM) and NAWCTSD. This Program Element supports research efforts in the engineering and manufacturing development phase of the acquisition cycle and is Training Center (CMTC), Hohenfels, Germany; and battle staff training in Battle Command Training Program (BCTP) will provide increased combat readiness through situation. Force-on-force training at the National Training Center (NTC), Ft. Irwin, CA; Joint Readiness Training Center (JRTC), Ft. Polk, LA, and Combat Maneuver techniques and technology for DIS and related simulations and simulator efforts (transferred to PE 0604760 in FY 97). Project D241, Non-System Training Devices-Mission Description and Budget Item Justification: Program Element funds engineering development of Non-System Training Devices to support force-on-force Center Training Systems Division (NAWCTSD) Support, funds in-house costs of project support by US Army Simulation, Training and Instrumentation Command while simultaneously keeping it combat-ready for any contingency. Project DC91, Distributive Interactive Simulation (DIS), included engineering development of therefore correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604715A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	неет (я	≀-2 Exhi	bit)		DATE Fe l	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	evelopm	ent	PE N 060 Enç	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engineering Development	⊓⊓∟E Ion-Systa I Develop	em Train oment	ing Devi	- səc	1	PROJECT DC82
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC82 Louisiana Maneuvers	1525	0	0	0	0	0	0	0	0	10030

development, and soldier issues shaping the force. As an evolving process, LAM exploited the results and outcomes of each exercise by incorporating lessons learned in order to enhance the value of follow-on exercises. Overall, LAM focused the Army's self-assessment of institutional effectiveness, provided direction for change, and consisted of a series of related exercises forming a campaign to assess the Army of the 21st century in areas of policy, doctrine, organization, training, materiel, leader A. Mission Description and Justification: DC82 - Louisiana Maneuvers (LAM): LAM served as a laboratory for the Army to practice its roles and missions, to develop and explore options, to assess and direct progress, to provide a framework for decisions by senior leaders, and to facilitate the Army's transformation. LAM oriented the Army's leadership to accomplish the national military strategy with available resources.

Acquisition Strategy: Competitive development.

FY 1996 Accomplishments:

- Continued development of analytic and operational models, simulation and other technology in support of Force XXI.
 - Support of AUSA events. 1060 1525
 - Total

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program: Project not funded in FY 99

B. Project Change Summary	FY 1996	FY 1997	FY 1998	FY 1999	
FY 1997 President's Budget	5810	0	0	0	
Appropriated Value	5973				
Adjustment to Appropriated Value	-4448				
FY 1998 Pres Bud Request	1525	0	0	0	

Change Summary Explanation: In FY 1996, (-4285) funding was reprogrammed to higher priority requirements.

Exhibit R-	
Page 2 of 18 Pages	
Project DC82	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ATION SHE	ET (R-2	Exhibit	(E)		DATE Febr	February 1997	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMB 06047 Engin	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engineering Development	-System	Trainir ent	ng Devic	,	PROJEC DC82	PROJECT DC82
l	000 + 787					,	To	Total
OPA2, Appropriation BE4162 MACOM Automation Systems	67 1998 0	0 0	FY 2000 F	FY 2001 0	FY 2002 0	$\frac{FY}{0} \frac{2003}{0}$	Compl 0	<u>Cost</u> 940
D. Schedule Profile: Not Applicable								
Project DC82	Page 3 of 18 Pages	ages			Exhibit	Exhibit R-2 (PE 0604715A)	04715A)	
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT C	OST BREAKI	JOWN (R-3)	DATE	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Libra .	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engineering Development	-System Trai	ning Devices -		PROJECT DC82
A. Project Cost Breakdown Program management Exercise support Total	FY 1996 1225 300 1525	FY 1997 0 0	FY 1998 0 0	FY 1999 0		. 1772
B. Budget Acquisition History and Planning Information: Not Applicable	olicable					
						A. Jane
						<u>u-</u>
Project DC82	Раов	Paoe 4 of 18 Paoes		Exhibit R-3	Exhibit R.3 (PE 0604715A)	
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RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE FeI	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development)evelopm	ent	PE N 060 En	PE NUMBER AND TITLE 0604715A Non-Engineering Dev	PE NUMBER AND TITLE O604715A Non-System Training Devices Engineering Development	em Train ment	ing Devic	- səc	a u	PROJECT DC91
COST (in Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC91 Distributive Interactive Simulation	7985	0	0	0	0	0	0	0	0	9345

A. Mission Description and Justification: DC91 - Distributive Interactive Simulation (DIS) - This project focuses on engineering development of techniques and DIS technology of wide area simulation networking in support of modeling and simulation, doctrinal development, training, and operations, utilizing live, virtual and constructive simulations. Effective FY 97 this project is transferred to PE 0604760A, which more clearly describes the program effort.

Acquisition Strategy: Competitive development leading to competitive procurement against performance specifications.

FY 1996 Accomplishments:

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Performed DIS verification, validation and accreditation methodology.

Developed enhancements to modular semi-automated forces software.

Continued engineering and development of Battlelab Reconfigurable Simulators.

Development conducted in support of Army Warfighting Experiment and Synthetic Theater of War. 2856 2300 7985

FY 1997 Planned Program: Project moved to PE 0604760A.

FY 1998 Planned Program: Project not funded.

FY 1999 Planned Program: Project not funded.

B. Project Change Summary	FY 1996	FY 1997	FY 1998	FY 1999
FY 1997 President's Budget	5972	0	0	0
Appropriated Value	6139			
Adjustment to Appropriated Value	+1846			
FV 1998 Pres Bud Request	7985	C	С	C

Change Summary Explanation: Funding - FY 96 (+2013) Funding increase to support Army Warfighting Experiements.

Project DC91

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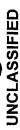
Exhibit R-2 (PE 0604715A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	ION SH	IEET (R	-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopme	ent	PE NUI 0604 Eng	PE NUMBER AND TITLE 0604715A Non-Engineering Dev	PE NUMBER AND TITLE 0604715A Non-System Tra Engineering Development	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engineering Development	ng Devic	,	E O	PROJECT DC91
C. Other Program Funding Summary OPA 3, Appropriation KA6000, Recon Simulators OMA, Reconfigurable Simulators	FY 1996 1222 16900	FY 1997 13825 11634	FY 1998 13823 16033	FY 1999 12803 13000	FY 2000 8997 13000	FY 2001 8282 14000	FY 2002 4960 18000	EY 2003 4969 18000	To Compl Cont'd Cont'd	Total Cost Cont'd Cont'd
D. Schedule Profile	FY 1996	<	F	FY 1997	-	FY 1998		•	Y 199	•
Award Contract DIS Verification and Validation Reconfigurable Simulator Contract X*	° *×	1	7	n	1		٤ 4	-	7	4
* Completed Milestones										
Project DC91			Page 6 of 18 Pages	' Pages		i	Exhibit	Exhibit R-2 (PE 0604715A)	304715A)	
									l	7.

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BREAKD	OWN (R-3)	DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engineering Development	System Train velopment		PROJECT DC91
A. Project Cost Breakdown Develop module definition for Soldier Combat Service Support and early entry simulations Simulation Software upgrades DIS Verification and Validation Total	6 FY 1997 7 S 5 3	FY 1998	FY 1999	
B. Budget Acquisition History and Planning Information: Not Applicable				· · · · · · · · · · · · · · · · · · ·
Project DC91	Page 7 of 18 Pages		Exhibit R-3 (PE 0604715A)	A)
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RDT&E BUDGET ITEM JU	FM JUS	TIFICA	TION SI	HEET (R	STIFICATION SHEET (R-2 Exhibit)	bit)		_{БАТЕ} Fet	February 1997	197
вирсет астіуітү 5 - Engineering and Manufacturing Developn	Developm	nent	PE NI 060 En	PE NUMBER AND TITLE 0604715A Non-4 Engineering Dev	E NUMBER AND TITLE 0604715A Non-System Tr Engineering Development	em Train ment	E NUMBER AND TITLE 0604715A Non-System Training Devices Engineering Development	- sə:	ā ப	РРОЈЕСТ D241
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D241 Non-System Training Devices	28996	35951	60512	57306	49309	30811	26222	39600	39600 Continuing Continuing	Continuing

Components. Corps Battle Simulation (CBS) is the Army's standard command and staff training simulation at the corps/division level. Brigade/Battalion Battle Simulation battle simulation to replace CBS and BBS. WARSIM will utilize current technology to efficiently provide training support and linkage to other simulations and simulators. (BBS) is a simulation that trains commanders and their staffs in command and control skills via two sided, free play, real time computer driven exercises. Combat Service CMTC; National Training Center Objective Instrumentation System (NTC OIS) to provide a completely digital based system for full tactical system connectivity and DIS WARSIM will comply with Simulation Interoperability Standards Organization (SISO) standards and open architecture to meet the Army's training requirements into the joint initiative managed by the JSIMS Joint Program Office. Multiple Integrated Laser Engagement Simulation 2000 (MILES 2000) will provide additional cost effective Forces (OPFOR) Surrogate Tracked Vehicles (STV) modernization to simulate the T-80 Main Battle Tank and additional OPFOR tracked vehicles at the NTC, JRTC and detail required to train logistics commanders and staffs. CSSTSS will be incorporated into the Warfighter Simulation (WARSIM). WARSIM will be the next generation compatibility. Devices developed will enable the Army to train units collectively to obtain synergistic results through the employment of weapons and support systems in Support Training Simulation System (CSSTSS) is a training simulation which supports training at battalions through echelons-above-corps levels to provide the level of next century, to include High Level Architecture (HLA) compliance. WARSIM is also the land component element of the Joint Simulation System (JSIMS), which is a (Infantry, Armor, Aviation, Air Defense, Artillery, Engineer, Chemical, and Support troops) training and multi-system training within the Army, to include the Reserve instrumentation for the Combat Training Centers (CTC's) to include Opposing Forces Surrogate Vehicles (OSV's) for display of doctrinally correct threat at the CTC's; Joint Readiness Training Center Military Operations in Urban Terrain (JRTC MOUT) for training in a realistic MOUT environment; Combat Training Center Opposing Acquisition Streamlining Act (FASTA). The Engagement Skills Trainer (EST) provides individual and squad level home station training with a deployable small arms A. Mission Description and Justification: D241 - NSTD Combined Arms: This project is used to develop prototype training devices to support Combined Arms weapon system capabilities during tactical engagement exercises. The Fire Support Combined Arms Tactical Trainer (FSCATT) provides for initial and sustainment gunnery training, and can be linked as part of the CATT family. FSCATT is designated as the Army's only Defense Acquisition Pilot Program IAW the Federal engagement trainer, resulting in a significant savings in ammunition costs. This project funds the development of training devices, simulators, simulations and their respective battlefield roles.

Acquisition Strategy: Competitive development efforts leading to competitive procurement against performance specifications.

FY 1996 Accomplishments:

Project D241

- 568 Continued limited BBS enhancements.
- 1585 Completed development of CSSTSS for transition into WARSIM

Exhibit R-2 (PE 0604715A)

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	RDT&E BUDGET ITEM JUSTIFICATIO	IIFICATION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineer	вироет астіуітү 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engineering Development	PROJECT BS - D241
FY 1996 Accomplia	 FY 1996 Accomplishments: (continued) 6485 Continued development of devices, simulators and simulations to support training at the Combat Training Centers, Air Ground Engagement System (AGES) II/CTC, JRTC MOUT, JRTC-Instrumentation System (IS). 3355 Completed CBS 1.5.3 and continued limited enhancements to CBS. 10340 Exercised contract option to downselect to prime contractor for WARSIM 2000 EMD. 6663 Continued development of FSCATT Phase I. Total 28996	ons to support training at the Combat Training Centers, A em (IS). to CBS. for WARSIM 2000 EMD.	ir Ground Engagement System
FY 1997 Planned Program: 20629 Develor 820 Initiate 3749 Comple 3209 Continu 6665 Continu 879 Small E	pment of WARSIM 2000 EMD. development MILES 2000 for new vite development of FSCATT Phase I limited enhancements to CBS. In development of devices, simulator business Innovation Research/Small	weapon systems (i.e., M1A2, M1A2 System Enhancement Program and Bradley A3). s and simulations to support training at Combat Training Centers to include JRTC M Business Technology Transfer (SBIR/STTR) Programs.	radley A3). ide JRTC MOUT Phase II.
FY 1998 Planned Program:	 1 Program: 3 Development of WARSIM 2000 EMD. 3 Initiate development of Engagement Skills Trainer. 3 Initiate development of Engagement Skills Trainer. 40 Continue development of devices, simulators and simulations to support training at Combat Training Centers to include JRTC Opposing Forces Surrogate Vehicle (OSV) BMP(2000), JRTC MOUT Phase II(3216), CTC OPFOR Tracked Vehicles(10500) and NTC OIS(2364). 46 Continue limited /high priority refinements to CBS Source Code, to support major training exercises (i.e., Prairie Warrior 98). 	is to support training at Combat Training Centers to incl II(3216), CTC OPFOR Tracked Vehicles(10500) and NT Code, to support major training exercises (i.e., Prairie Wa	ide JRTC Opposing Forces C OIS(2364). rior 98).
FY 1999 Planned Program:	pment of WARSIM 2000 EMD and commencem to development of Engagement Skills Trainer. The development of devices, simulators and simulary, CTC OPFOR Tracked Vehicles(8300) and NT to limited /high priority refinements to CBS Sour	titions to support training at the Combat Training Centers, to it OIS(5453). Ce Code, to support major training exercises (i.e., Prairie Wa	ters, to include JRTC MOUT Phase irie Warrior 99).
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICATION SHEET (R-2 Exhibit)	ON SH	EET (R	2 Exhib	oit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	evelopme	ent	PE NUN 0604 Engi	PE NUMBER AND TITLE 0604715A Non-Engineering Dev	PENUMBER AND TITLE 0604715A Non-System Tra Engineering Development	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engineering Development	ng Devic	- sə	ā ப	РРОЈЕСТ D241
 B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustment to Appropriated Value FY 1998 Pres Bud 		EX 1996 27354 28121 875 28996	EY 1997 29752 35951 35951	Y 1997 29752 35951 0 35951	FY 1998 31390 60512	FY 1999 26925 57306	9 5 6			
Change Summary Explanation: Funding: FY 98 (+29122)/FY 99 (+30381) - funding increase to support WARSIM, the Combat Training Center programs and Engagement Skills Trainer.	9122)/FY 99	(+30381) - fi	unding incre	ease to supp	ort WARSIN	A, the Comb	at Training	Center progr	ams and En	gagement
C. Other Program Funding Summary OPA3, Appropriation	FY 1996 70455	FY 1997 84153	FY 1998 49668	FY 1999 60349	FY 2000 126360	FY 2001 164249	FY 2002 104968	FY 2003 116938	To Compl Cont'd	Total Cost Cont'd
OPA3, Appropriation	39959	17311	26724	30444	43898	58929	74263	36425	Cont'd	Cont'd
MA6600 C1C Support OPA3, Appropriation NA0174 Fire Support Combined Arms Tactical Trainer	0	17377	19860	28359	25578	16630	0	0	0	107804
D. <u>Schedule Profile</u>	FY 1996	4	FY 1	FY 1997	4	FY 1998	% « 4	-	FY 1999	4
WARSIM Downselect Option/Award AGES II/CTC-IS Site Integration EST Contract Award FST Preliminary Design Review (PDR)	**		1		×		·	,		
EST Critical Design Review (CDR) JRTC-IS IOC				×			<	×	~	
JRTC OSV BMP MS I/III JRTC OSV BMP PDR					×	×	>			
JRTC OSV BMF 1ES1 JRTC OSV BMP CDR JRTC MOUT Phase II MS 1/III				×		`	×			
Project D241		P	Page 10 of 18 Pages	8 Pages			Exhibit	Exhibit R-2 (PE 0604715A)	304715A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604715A Non-System Training Devices - Engineering Development	
D. Schedule Profile	661	FY 1999
	2 × ×	2
Project D241	Page 11 of 18 Pages	Exhibit R-2 (PE 0604715A)
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RDT&E PROGRAM ELEMENT/PROJ	JECT CC	PROJECT COST BREAKDOWN (R-3)	DOWN (R-3		DATE Fahrijary 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	<u> </u>	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engineering Development	E-System Trai	ning Device		PROJECT D241
A. Project Cost Breakdown System Development Test and Evaluation Technical Data SBIR/STTR Total	FY 1996 27464 1296 236 28996	FY 1997 34400 87 585 879 35951	FY 1998 54396 5697 419 60512	FY 1999 50782 6270 254 57306		
B. Budget Acquisition History and Planning Information: Not Applicable	able	•				
Project D241	Page 12 (Page 12 of 18 Pages		Exhibit R	Exhibit R-3 (PE 0604715A)	(T

RDT&E BUDGET ITEM JUS'	EM JUS	TIFICA	TION SE	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE NU 060 Enç	PE NUMBER AND TITLE 0604715A Non-System Tra Engineering Development	ппе Ion-Syste I Develop	PENUMBER AND TITLE 0604715A Non-System Training Devices Engineering Development	ng Devic	- sə:	P D	РRОЈЕСТ D396
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D396 Tactical Simulation (TIARA)	1975	2722	5665	5047	4765	4494	5963	6357	6357 Continuing Continuing	Continuing

2000. It provides simulated, raw intelligence data to drive the intelligence analysis function during major training exercises (i.e., Prairie Warrior, Ulchi Focus Lens, Atlantic A. Mission Description and Justification: D396 - Tactical Simulation (TACSIM): TACSIM/ Warfighters' Simulation (WARSIM) 2000 Intelligence Module (WIM): TACSIM is the intelligence driver for the Corps Battle Simulation (CBS). WIM will replace TACSIM in FY98 and will be used as the intelligence driver for WARSIM Resolve, BCTP Warfighter Exercises and various Corps/Division and Joint exercises). TACSIM/WIM is a TIARA program.

Acquisition Strategy: Competitive development leading to competitive procurement against performance specifications.

FY 1996 Accomplishments:

- Completed TACSIM 2.1.5.3 development.
- Completed TACSIM/Aggregate Level Simulation Protocol (AGSP) interface development.
 - Initiated TACSIM 2.1.5.4 development/compatibility with CBS.
 - Continued development of WARSIM intelligence capability. 457

FY 1997 Planned Program:

- Provide Government project management, engineering, technical, and contract support.
- Maintain contractor support services to WIM project effort. 400
 - Contract award for development of WIM capability. 1522
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

FY 1998 Planned Program:

- Provide Government project management, engineering, technical, and contract support.
 - Maintain contractor support services to WIM project effort. 410
 - Continue WIM software development under contract. 4835
- 5995 Total

Project D396

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Exhibit R-2 (PE 0604715A)



RDT&E BUDGET ITEM JUSTIFICATIO	TIFICATION SHEET (R-2 Exhibit)	-2 Exhibi	it)	DATE Februa	February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604715A Non-System Tra Engineering Development	пт.Е lon-Systen Developm	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engineering Development	evices -	PROJECT D396
 FY 1999 Planned Program: 100 Provide Government/Contract support. 420 Maintain support services to WIM project effort. 4327 Finalize WIM Initial Operating Capability (IOC) software d version. 200 Support formal technical testing of WIM software for IOC. Total 5047 	evelopment; contin	ue developmer	tt of WIM Full Op	effort. (IOC) software development; continue development of WIM Full Operating Capability (FOC) software oftware for IOC.	OC) software
e Summary 's Budget e or opriated Value	EY 1997 2781 2722 0	FY 1998 3100	FY 1999 2295		
FY 1998 Pres Bud 5047 Change Summary Explanation: Funding: FY 98(+2565)/FY 99(+2752) - funding increase to support the WARSIM 2000 intelligence model.	2722 increase to support	5665 the WARSIM	5047 2000 intelligence	model.	
C. Other Program Funding Summary: Not applicable					
D. Schedule Profile 1 2 3 4 1 Software Build Developmental Test and Evaluation WIM Contract Award WIM COTTAGE Complete	FY 1997 2 3 X X	4 X	FY 1998 2 3	FY 1999	
WIM IOC WIM IOC					< ×
* Completed Milestones					
Project D396	Page 14 of 18 Pages		Û	Exhibit R-2 (PE 0604715A)	15A)

RDT&F PROGRAM FI FMFNT/PROJECT COST BREAKDOWN (R-3)	IFCT CO	ST RRFAK	DOWN (R-3		DATE Colours 4007	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604715A Non-System Training Devices Engineering Development	E-System Trai	/ ining Devic	es - D396	E .
A. Project Cost Breakdown Software Development System Engineering Configuration Management Project Management Technical Data Developmental Test and Evaluation SBIR/STTR Total	FY 1996 518 478 360 0 260 359	FY 1997 1000 522 0 1133 67 2722	FY 1998 4000 835 0 830 0 0	FY 1999 3320 1007 0 520 0 200		
B. Budget Acquisition History and Planning Information: Not Applicable	licable programme of the programme of th	15 of 18 Dates				
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	2-2 Exhi	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PENI 060 Enç	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engineering Development	тпсе Von-Systa Develop	em Train ment	ing Devic	ses -		РКОЈЕСТ D573
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D573 STRICOM and Naval Air Warfare Center Training Systems Division (NAWCTSD)	6996 .	10115	10572	10695	11459	. 11627	15375	11100	11100 Continuing Continuing	Continuing

Army share of the operating costs of the Naval Air Warfare Center Training Systems Division (NAWCTSD) through an Inter-Service support agreement which is reviewed A. Mission Description and Justification: D573 - STRICOM and NAWCTSD: This project funds STRICOM personnel salaries and support costs and a proportionate annually.

FY 1996 Accomplishments:

- 8459 Funded STRICOM personnel and support.
 - Funded NAWCTSD support. 1200 9659
 - Total

FY 1997 Planned Program:

- 8915 Funds STRICOM personnel and support.
 - Funds NAWCTSD support. 1200
 - 10115 Total

FY 1998 Planned Program:

- Funds STRICOM personnel and support. 9322
 - Funds NAWCTSD support. 1250 10572
 - Total

FY 1999 Planned Program:

- Funds STRICOM personnel and support. 9445
 - Funds NAWCTSD support. 1250 10695
 - Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ICATION	N SHEET (R-2 Exhibi	t)	DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604715A Non- Engineering Dev	e number and title 0604715A Non-System Tra Engineering Development	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engineering Development	evices -	PROJECT D573
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustment to Appropriated Value FY 1998 Pres Bud	FY 1996 9717 9987 -328 9659	FY 1997 10332 10115 0 10115	FY 1998 10761 10572	FY 1999 10679 10695		
C. Other Program Funding Summary: Not applicable						
D. Schedule Profile: The nature of this project does not lend itself to acquisition milestones.	o acquisition	milestones.				
						<u> </u>
Project D573	Page	Page 17 of 18 Pages		Ú	Exhibit R-2 (PE 0604715A)	7
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT C	OST BREAK	DOWN (R-3		DATE February 1997	, 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604715A Non-System Training Devices - Engineering Development	E n-System Trai evelopment	ning Devic	- sə:	РРОЈЕСТ D573
 A. Project Cost Breakdown Fund STRICOM Personnel & support Fund NAWCTSD Support Total 	FY 1996 8459 1200 9659	EX 1997 8915 1200 10115	EY 1998 9322 1250 10572	FY 1999 9445 1250 10695		
B. Budget Acquisition History and Planning Information: Not Applicable	cable					
Project D573	Page I	Page 18 of 18 Pages		Exhibit	Exhibit R-3 (PE 0604715A)	(A)
		829				Item 83

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SUL ME	TIFICA'	TION S	JEET (R	R-2 Exhi	bit)		DATE Fe t	February 1997	260
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	evelopm	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604716A Terra Development (T	PENUMBER AND TITLE 0604716A Terrain Information - Engineering Development (TIARA)	formatio	n - Engin	eering		РРОЈЕСТ D579
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D579 Field Army Map Sys Eng Dev	8509	7144	2942	2686	2034	2502	2247	2163	2163 Continuing Continuing	Continuing

products. The Combat Terrain Information Systems (CTIS) Modernization Plan stated the requirement to proceed immediately with the Downsized DTSS configuration and deployed at Division, Corps, and EAC in support of these missions. The DTSS/QRMP will automate the updating and processing of terrain information into terrain analysis A. Mission Description and Budget Item Justification: This program element funds development of the Digital Topographic Support System/Quick Response Multicolor Printer (DTSS/QRMP). The current terrain analysis, topographic and reproduction support provided by Army Engineer Terrain Teams is a slow, labor intensive Program Element supports research efforts in the Engineering and Manufacturing Development (E&MD) phases of the acquisition strategy and is therefore correctly placed further identified that QRMP functionality would be incorporated into the DTSS for a single integrated terrain analysis and reproduction capability. It has been determined products, provide rapid reproduction of low volume, up-to-date, large format, full color imagery maps, situation overlays, special graphics (e.g. captured enemy maps) and that the downsized capability is now more appropriate to support contingency operations, operations other than war, and split based operations. The DTSS/QRMP will be interoperable architecture. Part of imagery exploitation includes the development of a Multi-Spectral Imagery Processor (MSIP), which provides an image map making capability. Due to current world events and the possibility of contingency missions in areas where standard map products are not available, image map production has become an urgent need. The CTIS project office was tasked with the mission to issue the DTSS-MSIP as an interim measure to topographic units. The project in this process that does not meet the needs of the Force XXI battlefield in which the commander must have the ability to rapidly obtain terrain information and topographic other topographic and terrain products. Using the most current technology available, the functional capabilities of DTSS and QRMP will be developed into a single in Budget Activity 5.

Hardware/Software (CHS) computer workstations in conjunction with non-development item (NDI) components to develop an integrated baseline hardware configuration. Program Management responsibility and milestone decision authority have been assigned to the Program Executive Officer for Command, Control, and Communications The contracting strategy for the DTSS/QRMP program is to execute the EMD phase through the current SE&I contractor, Lockheed Martin Corporation. A Competitive system integration, and provide units for formal test and evaluation. The procurement of the Multi-Spectral Image Processor (MSIP) was approved by the Army. The The plan is to utilize the Combat Terrain Information Systems (CTIS) System Engineering and Integration (SE&I) contractor to execute the EMD phase, to perform 5-ton ISO 20 foot shelter configuration. The upgraded 5-ton systems will provide an integrated capability while preserving the Army's investment in the DTSS the Full Rate Production of the DTSS/QRMP. Upgrades to the existing DTSS units will also be accomplished through the CTIS SE&I contract. The computer acquisition of the MSIP relied upon existing contracts and commercial-off-the-shelf to the fullest extent possible. Existing DTSS units will be upgraded to a Cost Plus Fixed Fee (CPFF) contract was awarded for the CTIS SE&I contract. A competitively awarded, Firm Fixed Price (FFP) contract is anticipated for Acquisition Strategy: The Acquisition Strategy being pursued for the DTSS/QRMP EMD phase is to utilize Army standard equipment and the Common Systems (PEO C3S). Project management is provided by the Project Director (PD) for Combat Terrain Information Systems. workstations for CTIS programs are being procured through the PM for Common Hardware and Software.

Project D579

Page I of 5 Pages

Exhibit R-2 (PE 0604716A)





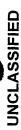
X	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	LIFICATION	NO SH	EET (R	-2 Exhit	oit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 5 - Engineering &	вироет астіvіту 5 - Engineering and Manufacturing Development	ınt	PE NUI 0604 Dev	PE NUMBER AND TITLE 0604716A Terra Development (T	PE NUMBER AND TITLE 0604716A Terrain Information - Engineering Development (TIARA)	ormatio	n - Engin	eering	# O	РRОЈЕСТ D579
FY 1996 Accomplishments:	ments: Completed development of DTSS Upgrade Continued development of downsized DTSS /QRMP Continued P3I Program (Interoperability) Initiated test and evaluation of EMD Prototypes	S /QRMP.								
FY 1997 Planned Program:	ogram: Complete development of downsized DTSS/QRMP Conduct test and evaluation of EMD Prototypes Initiate P3I development for DTSS/QRMP Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)	//QRMP ypes Business Techn	10logy Tra	ansfer (SBIF	VSTTR)	·				
FY 1998 Planned Program: • 2942 Continu Total 2942	ogram: Continue P3I development for DTSS/QRMP - communications and ABCS interoperability	- communica	tions and	ABCS interd	operability					
FY 1999 Planned Program: • 2686 Continu Total 2686	ogram: Continue P3I development for DTSS/QRMP - communications and ABCS interoperability.	- communica	tions and	ABCS interd	operability.					
B. Project Change Summary FY 1997 Presidents Budget Appropriated Value Adjustments to Appropriated Value	mmary dget riated Value	FY 1996 8728 8817 -308	FY 1997 7369 7144		FY 1998 3108	<u>FY 1999</u> 2877	<u>8</u>			
FY 1998 Pres Bud Request	nest	8509	7	7144	2942	2686	98			
C. Other Program Funding Summary	Inding Summary FY 1996	FY 1997 FY	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total Cost
Project D579			Page 2 of 5 Pages	o403 Pages	1000	9031	4703 Exhibit	4703 0208 C0111 Exhibit R-2 (PE 0604716A)	Cont 04716A)	C0011
,			831							Item 84

RDT&E BUDGET ITEM JUST	TEM JUST	IFICATION	FIFICATION SHEET (R-2 Exhibit)	R-2 Ex	nibit)		Dβ	DATE Febr	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developme	t.	PE NUMBER AND TITLE 0604716A Terrain Information - Engineering Development (TIARA)	D TITLE Terrain ent (TIAF	Informa (A)	ation - E	nginee	ring		PROJECT D579
D. Schedule Profile	FY 1996	-	FY 1997	4	1 F	FY 1998	4	1 L	FY 1999 2 3	4
Delivery of DTSS/QRMP Build 1 S/W Delivery of Enhanced DTSS-MSIPs Initiated DTSS (Heavy) Upgrades Complete DTSS (Heavy) Upgrades Start Downsized DTSS/QRMP Developmental Test and Evaluation/ Operational Test and Evaluation (DT&E/OT&E) Initiate Fielding of Upgraded DTSS Downsized DTSS/QRMP Milestone III Award DTSS/QRMP Production Contract Conduct Production Verification Testing of Downsized DTSS/QRMP Initiate Fielding of Downsized DTSS/QRMP *Milestone Complete	*	4	7		- ×		4	- ×		1
Project D579		P	Page 3 of 5 Pages				Exhibit F	Exhibit R-2 (PE 0604716A)	04716A)	
			832							Item 84



RD	RDT&E PROGRAM ELEMENT/	RAM EL	EMENT/P	ROJEC	T COST	PROJECT COST BREAKDOWN (R-3)	OWN (R	3)	DATE Fe	February 1997	397
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ig and Manu	facturing [Developmer	ıt.	PE NUMB 06047 Devel	PE NUMBER AND TITLE 0604716A Terrain Inf Development (TIARA)	in Informa ARA)	PE NUMBER AND TITLE 0604716A Terrain Information - Engineering Development (TIARA)	neering	. .	РРОЈЕСТ D579
A. Project Cost Breakdown	reakdown			FY 1996		FY 1997	FY 1998	FY 1999			
Primary System Development	velopment			33		1800	200	200			
Software Development	ient			. 25	2508	2272	1300	1100			
Government Furnished Equipment	hed Equipment				150	200	30	30			
Government Engineering Support (includes Test Support)	sering Support (in	ncludes Test S	upport)		632	1044	300	229			
Contractor Engineering Support	ring Support			O \	006	500	300	300			
Licenses and Maintenance	enance	•		•	11	30	12	27			
Project Management and Administration SBIR/STTR	ıt and Admınıstral	tion		J \	950	823 175	200	200			
Total				8	8509	7144	2942	2686			
B. Budget Acquisition History and Planning Information	tion History and	Planning Inf	ormation								
Performing Organizations	izations										
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity	Vehicle	<u>Date</u>	EAC	EAC	FY 1996*	FY 1996	FY 1997	FY 1998	FY 1999	<u>Complete</u>	<u>Program</u>
Product Development Organizations	ent Organization										
Loral Defense	C/CPFF/FFP	7/87	35657	35657	35657	0	0			0	35657
Akron, OH	Prod Option	9		9	,	i	1			,	
Lockheed Martin Fr Wash PA	C/CPFF	1/93	21023	21023	11100	5851	3955			0	20906
In-House	MIPR					916	970	512	527	Cont	2985
Support/TEC											
TBD	TBD	TBD					ļ	1800	1600	Cont	3400
SBIR/STIK	1.100	24.0					175				175
Support and Management Organizations	gement Organiz	ations									
Fairfax, VA											
SYTEX	FFP thru PM					400	150	100	100	Cont	750
McLean, VA	Intel Fusion										
Project D579				I	Page 4 of 5 Pages	ses		Exhit	Exhibit R-3 (PE 0604716A))604716A)	
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RDT&E F	ROGE	SAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ROJEC	r cost B	REAKDO	JWN (R-	<u></u>	DATE Fe	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Manufa	cturing [Jevelopmer	#	PE NUMBER 060471 Develo	PE NUMBER AND TITLE 0604716A Terrain Inf Development (TIARA)	∍e n∪mber AND TITLE 0604716A Terrain Information - Engineering Development (TIARA)	tion - Eng	ineering	. ப	РRОЈЕСТ D579
Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle MITRE Corp FFRDC thru McLean, VA CECOM OGAs MIPR Test and Evaluation Organizations TECOM MIPR		Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to F <u>Y 1996*</u>	FY 1996 500 397 235	FY 1997 350 544 500	FY 1998 200 300	FY 1999 200 200 29	Budget to Complete Cont Cont	Total 1250 1441 764
Government Furnished Property Contract Method/Type Award Item or Funding Obligat Description Vehicle Date Product Development Property SUN'S (ECS) REQS VAR TBD Support and Management Property: None	ed Property Contract Method/Type or Funding Vehicle t Property REQS	Award of Obligation <u>Date</u> VAR	Delivery <u>Date</u> VAR		Total Prior to FY 1996* 300	FY 1996 150	FY 1997	FY 1998	FY 1999	Budget to Complete 0 Cont	Total Program 450 560
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	erty: None ent gement	da.			47057	6977 1297 235 8509	5600 1044 500 7144	2342 600 2942	2157 500 29 2686		64133 3441 764 68338
*NOTE: Prior year funding only covers the Prime Contractors. Project D579	only cover	s the Prime	Contractors.		Page 5 of 5 Pages	səર્ર		Exh	Exhibit R-3 (PE 0604716A)	0604716A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	STIFICA	TION SI	HEET (F	१-2 Exhi	bit)		DATE Fel	February 1997	160
вирсет Астіуітү 5 - Engineering and Manufacturing Developm	Jevelopm	ent) DE N	PE NUMBER AND TITLE 0604726A Integi (IMETS) (TIARA)	PE NUMBER AND TITLE 0604726A Integrated Meteorological System (IMETS) (TIARA)	Meteor	ological (System		PROJECT DD85
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DD85 Integrated Meteorological System (IMETS)	0	0	1946	1931	2398	1851	0	0	0	8126

decision aid support to the Army. The IMETS is an Army-furnished system consisting of a standard shelter and vehicle, and Army Common Hardware and Software of the evolving upgrades to the IMETS Block II, integrating the Defense Information Infrastructure (DII) and Common Operating Environment (COE). The IMETS is a mobile tactical automated weather data receiving, processing, and dissemination system designed to provide timely weather and environmental effect forecasts, observations, and AR115-10/AFR 105-3. This project supports research efforts in the engineering and manufacturing development phase of the acquisition cycle and is therefore correctly Army Battle Command System which will be operated by Air Force weather personnel and maintained within planned Army support for systems and components IAW A. Mission Description and Budget Item Justification: This program element, Integrated Meteorological System (IMETS), funds the development of the IMETS placed in Budget Activity 5.

user distributed communication environment interoperability. Weather tactical decision aid upgrades and updated forecaster aids will be developed to include products from will be continued to include software modules as they mature and become part of the COE library. A common map server update is of primary focus along with increased Architecture. The IMETS NDI acquisition strategy has proven successful in the fielding of eleven systems since program initiation in FY92. This development strategy the Air Force initiative of the High Resolution Weather Satellite Receiver, the Small Tactical Terminal for Defense Meteorological Satellite Program (DMSP) and high resolution domestic and foreign weather satellite data. Weather Application modules from the Army Research Laboratory will be integrated and fielded as a capability Acquisition Strategy: The IMETS Block III development program will build on the Block II initiative including conversion to the DII and the Army C4I Technical upgrade to the current software baseline.

FY 1996 Accomplishments: Project not funded in FY 96.

FY 1997 Planned Program: Project not funded in FY 97.

FY 1998 Planned Program:

946 Evaluate, configure and integrate high performance expanded tech base prototype capabilities into operational IMETS prototypes

Total 1946

Project DD85

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Exhibit R-2 (PE 0604726A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R	2 Exhib	it)	DATE Feb i	February 1997	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604726A Integ (IMETS) (TIARA)	⊤∟E tegrated RA)	PE NUMBER AND TITLE 0604726A Integrated Meteorological System (IMETS) (TIARA)	al System	PROJECT DD85	ў
 FY 1999 Planned Program: 1000 Continue to investigate, develop and apply advanced software and hardware processing, storage, display and inpubase prototypes of high performance expanded weather applications capabilities. 931 Continue to evaluate, configure and integrate tech base prototype capabilities into operational IMETS prototypes Total 	advanced software and hardware processing, storage, display and input/output (I/O) technologies to technologies to tech complications capabilities.	cessing, storr	age, display and inp I IMETS prototype	nut/output (I/O) tec s	chnologies to t	ech
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1997 0	FY 1998 0	FY 1999 0			
FY1998 Pres Bud Request Change summary Explanation: FY 98 and FY 99 fund develop IMETS Block II integration of Army Research Laboratory and Air Force weather products.	0 integration of Army	1946 Research Lab	1931 ooratory and Air Fo	rce weather produ	cts.	
C. Other Program Funding Summary FY 1996 FY 1997 FY OPA 2 - SSN: BW 0021-IMETS 7463 3140	FY 1998 FY 1999 1379 0	FY 2000 8846	FY 2001 FY 2002 0 0	02 FY 2003 0 0	To <u>Compl</u> Cont	Total Cost Cont
D. Schedule Profile FY 1996 1 2 3 4 1	FY 1997 2 3	4	FY 1998 2 3	F 1 2	Y 1999 3	4
Develop tech base prototype Expand Battlescale Forecast model Expand Integrated Weather Effects			×××	×		
Integrate Defense MetSat Program Environmental Data Record				×		
Develop/integrate Vis5D program Develop heat/cold tactical decision aid Generate basic Down Wind Message from			×	×		
Dr.M. Develop Target Area Meteorological capability				×		
D85	Page 2 of 4 Pages		Ú	Exhibit R-2 (PE 0604726A)	04726A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604726A Integrated Meteorological System (IMETS) (TIARA)	steorological System	PROJECT DD85
9661 A	-	Y 1998 FY 199	
Develop visibility, thunderstorm and turbulence model		2 X X X X X X X X X X X X X X X X X X X	4
Project DD85	Page 3 of 4 Pages	Exhibit R-2 (PE 0604726A)	(
	837		Item 85

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ECT COS	T BREAKD	OWN (R-	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NC 060 (IMI	PE NUMBER AND TITLE 0604726A Integrated Meteorological System (IMETS) (TIARA)	rated Mete	orological	System	<u>н</u> О	PROJECT DD85
A. Project Cost Breakdown Systems Development Project Management Matrix Management Test Total	FY 1996	FY 1997	FY 1998 1296 250 350 50 1946	FY 1999 1281 250 350 50 1931			
lanning Information: Award or Performing Obligation Activity EAC	Project Total Office Prior to EAC FY 1996	Total rior to 1996 FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Froduct Development Organizations Logicon ARL MIPR Misc. Contracts PWD Support and Management Organizations CECOM MIPR Test and Evaluation Organizations: None	6	0096		1000 946	1000	1800 1800 649	9600 3800 3677 649
Government Furnished Property: None	ò	S		,		000,6	Ţ
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	, S	0096		1946 1946	1931 1931	3600 649 4249	17077 649
Project DD85	Page 4 of 4 Pages	4 Pages		E N	Exhibit R-3 (PE 0604726A)	0604726A)	· · · · · · · · · · · · · · · · · · ·
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA"	TION S	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE FeI	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE NI 000	PE NUMBER AND TITLE 0604739A JTT/ (PE NUMBER AND TITLE O604739A JTT/CIBS-M (TIARA)	-M (TIAR	۵)		<u>а</u>	РRОЈЕСТ D702
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D702 Common Integrated Broadcast Service-Modules	0	4765	4499	4447	4426	4409	0	0	0 Continuing Continuing	Continuing

PEs/SSNs DoD wide. This program funds design, development, test and evaluation of initial CIBS hardware and software modules, as well as implementing performance A. Mission Description and Budget Item Justification: The Integrated Broadcast Service (IBS) is the worldwide, DoD standard network for transmitting tactical and hardware and software). This is a FY 97 new start required to implement the IBS plan and consolidate/eliminate duplication of effort previously spread across multiple expanding modifications to the family of CIBS-M equipment. This program element supports development efforts in the Engineering and Manufacturing development consolidate and replace existing IBS receiver functionality/capability, inherent with the duplicative existing systems, with a "common family" of IBS modules (both strategic intelligence and targeting data. The Common Integrated Broadcast Service - Modules (CIBS-M) Joint Program (all services and SOCOM) was created to phases of the Acquisition Strategy and is therefore, correctly placed in Budget Activity 5.

systems. Additionally, this line provides for necessary modifications to IBS modules as the broadcast networks continue to evolve and modify their formats and protocols. Acquisition Strategy: The CIBS-M family of modules will be the sole provider of IBS Modules to a variety of IBS receivers across all DOD component agencies. The Joint Program will competitively develop hardware and software modules and procure the required modules for integration into host receiver (e.g. MATT, CTT, TRE)

FY 1996 Accomplishments: Project not funded in FY 96.

FY 1997 Planned Program:

- 3359 Develop CIBS Module discrete designs and combinations
 - 911 Develop DAMA Compliant CIBS-M software module
- 378 Integrate and Test DAMA Compliant software module
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs
 - Total 4765

FY 1998 Planned Program:

- 1450 Complete CIBS-Module prototype fabrication
 - 1644 Complete CIBS-Module Development
 - 1405 Host system integration/test
 - Total 4499

Project D702

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Exhibit R-2 (PE 0604739A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUST	LIFICAT	ION SH	EET (R	-2 Exhik	it)		DATE Feb	February 1997	2
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopme	int	PE NUI 0604	PE NUMBER AND TITLE 0604739A JTT //	ITLE IT/CIBS-I	ЭТІТЕ JTT/CIBS-M (TIARA)	a		PR D.	Р ROJECT D702
 FY 1999 Planned Program: 2800 Design Next Generation CIBS-Modules 799 Design/Develop "Over the Air" Software Load Capability 848 Host System Integration/Test Total 4447 	-Modules " Software Lo	oad Capabili	Y 2							
B. Project Change Summary FY 1997 Presidents Budget Appropriated Value Admistments to Ampropriated Value		FY 1996 0 0	FY 1997 4867 4765	<u>1997</u> 4867 4765	<u>FY 1998</u> 4845	FY 1999 4819	66			
FY 1998 Pres Bud Request		0	4	4765	4499	4447	1.1			
C. Other Program Funding Summary V29600 JTT/CIBS-M (Tiara) BA1081 Integrated Broadcast Terminal Mod (Tiara)	FY 1996 29076 0	FY 1997 18991 3361	FY 1998 11438 3294	FY 1999 11703 932	FY 2000 25527 0	FY 2001 26450 0	FY 2002 12904 0	FY 2003 13554 0	To Compl Cont 0	Total Cost Cont
D. Schedule Profile	FY 1996	4	FY 2	FY 1997 2 3	4	FY 1998	3 8	1 F	FY 1999 2 3	4
Award CIBS-M Contract DAM Module Design Review Prototype Test Initial CIBS Module Preliminary Design Review Critical Design Review Prototype Test Next Generation Module Preliminary Design Review Critical Design Review Prototype Test Prototype Test Prototype Test Prototype Test		· ×		· ×	· · × ×	×		× ×		-
Project D702			Page 2 of 3 Pages	Pages			Exhibit	Exhibit R-2 (PE 0604739A)	04739A)	
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RDT&E PROGRAM ELEMENT/PRO.	/PROJECT C	COST BREAKDOWN (R-3)	EAKDO	WN (R-	3)	DATE F	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604739A JTT/	AND TITLE	JTT/CIBS-M (TIARA)	ARA)			PROJECT D702
A. Project Cost Breakdown Hardware Development Software Development Host System Integration Technical Test Project Management SBIR/STIR Total	FY 1996	FY 1997 2492 1211 0 740 205 117 4765	1997 2492 1211 0 740 205 117 4765	FX 1998 693 1645 1405 541 215 4499	FY 1999 850 2471 848 173 105			
Tanning Internation Award or Performing Obligation Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations TBD C/PFF Feb 97 TBD SBIR/STTR Support and Management Organizations CECOM MIPR Test and Evaluation Organizations: None	TBD	0	0 0	4443 117 205	4284	4342	Cont	13069 117 525
Government Furnished Property: None Subtotal Product Development				4560	4284	4342		13186
Subtotal Support and Management Subtotal Test and Evaluation Total Project				205	215	105		525
Project D702	Page	Page 3 of 3 Pages			Exhi	bit R-3 (PE	Exhibit R-3 (PE 0604739A)	

RDT&E BUDGET ITEM JUS	TEM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	≀-2 Exhi	bit)	:	DATE Fet	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developm	ent	PE N 060 En	PE NUMBER AND TITLE 0604740A Tactical Surveillance System Engineering Development	тп <u>ге</u> actical S i Develop	urveillan	ce Syste	- L	.	РРОЈЕСТ D661
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D661 Suite of Survivability Enhancements System	2954	0	0	0	0	0	0	0	0	2954

or deflect enemy munitions. The first phase of the SSES program will field Laser Warning Receivers (LWR) to Bradley A3 vehicles. Initially, AN/AVR-2A Laser Warning phase of the SSES program will field Missile Warning Receivers to Bradley A3 vehicles. Additional phases of this program are contemplated which will provide additional combat vehicles. SSES will protect Army vehicles by providing advance warning of attack and activating countermeasures which will obscure our vehicles and jam, decoy developed that will integrate current and future sensors and countermeasures to provide manual, semiautomatic and automatic activation of countermeasures. The next Horizontal Technology Integration (HTI) effort to develop, produce and apply an integrated suite of common electronic sensors and countermeasures to Army ground countermeasures to the suite, and field the suite to other vehicles. This PE supports research efforts in the engineering and manufacturing development phases of the Mission Description and Budget Item Justification: This program element which involves the Suite of Survivability Enhancements Systems (SSES) program is a Receivers, currently in production for Army aviation platforms, will be modified for ground vehicle use. In addition, a Commander's Decision Aid (CDA) will be acquisition strategy and is therefore correctly placed in Budget Activity 5.

Acquisition Strategy: Follow-on to existing contracts.

FY 1996 Accomplishments:

- 1400 Modified 3 vehicle sets of AN/AVR-2A's
- Initiated integration of Laser Warning Receiver into Bradley A3 1000
 - Provided Technical Support to SSES 444
 - Designed Integration (GDLS) 110

FY 1997 Planned Program: Funded under PE 0203735A Project D718 Combat Vehicle Improvement Programs

FY 1998 Planned Program: Funded under PE 0203735A Project D718 Combat Vehicle Improvement Programs

FY 1999 Planned Program: Funded under PE 0203735A Project D718 Combat Vehicle Improvement Programs

Project D661

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Exhibit R-2 (PE 0604740A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	CATION SHEE	T (R-2 Exhibi	t	DATE February	ary 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AN 0604740A Engineerir		D TITLE Tactical Surveillance System ig Development		PROJECT D661
 B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request C. Other Program Funding Summary: Not Applicable 	EY 1996	FY 1998 0 0 0 0	FY 1999 0 0 0 0		
D. Schedule Profile 1 2 3 Milestone Decision Authority IPR Laser Warning Receiver Modification Bradley A3 A-Kit Development	FY 1997 4 1 2 3 X*	3 4 1	FY 1998 2 3 4	-	FY 1999 2 3 4
* Milestones Completed					
Project D661	Page 2 of 3 Pages	SE	Exhi	Exhibit R-2 (PE 0604740A)	40A)

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	GRAM EL	EMENT/PR	OJECT	SOST BI	REAKDO	WN (R-	3)	DATE Fe	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	nufacturing [Jevelopment		PE NUMBER AND TITLE 0604740A Tacti Engineering Dev	ve number AND TITLE 0604740A Tactical Surveil Engineering Development	al Surveil	PE NUMBER AND TITLE 0604740A Tactical Surveillance System Engineering Development	tem -	4 u	РRОЈЕСТ D661
A. Project Cost Breakdown Technical Support Program Management Support Contract - Hughes, UDLP, GDLS Total			EY 1996 242 203 203 2509 2954		FY 1997	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Active Activity Vehicle Date E	and Planning Inf pe Award or Obligation Date	ormation Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FX 1999	Budget to Complete	Total Program
Hughes Prod/FFP Jun 96 UDLP CPFF Jun 96 UDLS CPFF Aug 90 Camber CPAF Aug 90 Camber CPAF Aug 90 Support and Management Organizations PM ASI MIPR Jun 96 Surviac MIPR Aug 90 CECOM MIPR Jun 96 SLAD, NM MIPR Jul 96 TARDEC MIPR Jun 96 Test and Evaluation Organizations: None Government Furnished Property: None Subtotal Product Development Subtotal Test and Evaluation Total Project	Jun 96 Jun 96 Jun 96 Aug 96 Aug 96 Aug 96 Jun 96 Jun 96 Jul 96 Jul 96 Jun 96 Jun 96 Jun 96 Jun 96 Jun 96 Jun 96	1000	1400		1400 850 140 119 168 15 100 100 42 20 20 2509 445					1400 850 140 119 168 15 100 100 42 20 20 2509 445
Project D661			Pay	Page 3 of 3 Pages 844	se.		EXP	Exhibit R-3 (PE 0604740A)	0604740A)	Item 87





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SI	HEET (R	-2 Exhil	bit)		DATE FeI	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE NU 060 Inte	PE NUMBER AND TITLE 0604741A Air Defense Command, Control, Intelligence - Engineering Development	пт <u>г</u> е iir Defens - Engine	se Comn ering De	nand, Co velopme	ntrol, nt		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	21810	. 20031	18350	9699	7635	8536	22163	19204	Continuing	Continuing
D126 FAAD Command and Control Engineering Development	18966	20031	18350	8699	7635	8536	22163	19204	Continuing	Continuing
D146 Air Defense Tactical Operations Center	2844	0	0	0	0	0	0	0	Continuing	Continuing

Sensor (LSDIS), Global Positioning System (GPS), Airborne Warning and Control System (AWACS), Ground Based Sensor (GBS), and the Army Battle Command System System (EPLRS), Joint Tactical Information Distribution System (JTIDS), Single Channel Ground and Air Radio System (SINCGARS), Light and Special Division Interim disseminate target information, air threat warning, and command and control information to all FAAD weapons [AVENGER, Bradley STINGER Fighting Vehicle (BSFV), area air defense automated information to support the command and control decision process at various levels of command. The mission is to collect, digitally process and Mission Description and Budget Item Justification: The Forward Area Air Defense Command, Control and Intelligence (FAAD C2I) System provides critical forward engagement operations software using Common Hardware/Software (CHS), Standard Integrated Command Post System (SICPS), Enhanced Position Location Reporting (ABCS) architecture. The projects in this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy Manportable Air Defense System (MANPADS), and combined arms]. Unique FAAD C2I software will provide the mission capability by integrating FAAD C2 and therefore are correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604741A)

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (F	-2 Exhi	bit)		DATE Fe	February 1997	197
BUDGET ACTIVITY 5 - Engineering	вирдет Астіуіту 5 - Engineering and Manufacturing Development	evelopm	ent	PE NI 060 Inte	PE NUMBER AND TITLE 0604741A Air E Intelligence - Er	PE NUMBER AND TITLE 0604741A Air Defense Command, Control, Intelligence - Engineering Development	se Comm ering Dev	and, Co relopme	ntrol, nt		PROJECT D126
Ö	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D126 FAAD Comman Development	FAAD Command and Control Engineering Development	18966	20031	18350	8699	7635	8536	22163	19204	Continuing	Continuing
A. Mission Descript System is an automat system utilizes non-de functions and uses the	A. Mission Description and Justification: Project D126 - FAAD Command and Control Eng Dev: The Forward Air Defense Command and Control (FAAD C2) System is an automated system deployed with FAAD weapons to provide accurate and timely command, control and targeting information for the weapon systems. The system utilizes non-developmental item sensors, computers, displays and interface hardware integrated with data communication equipment. It automates mission relates functions and uses the Single Channel Ground and Airborne Radio Systems (SINCGARS) for voice and the Army Data Distribution System (ADDS) for data.	t D126 - FA, weapons to uputers, displ	VD Comma provide acc ays and inte o Systems (ind and Concurate and tirestace hardways. SINCGARS	nely comma are integrate for voice a	D Command and Control Eng Dev: The Forward Air Defense Command and Control (FAAD C2) rovide accurate and timely command, control and targeting information for the weapon systems. The sand interface hardware integrated with data communication equipment. It automates mission related Systems (SINCGARS) for voice and the Army Data Distribution System (ADDS) for data.	vard Air Def ind targeting communicati Data Distril	ense Comm information on equipmen	and and Cor i for the wea nt. It autom m (ADDS) f	ntrol (FAAD pon systems ates mission for data.	C2) . The related
Acquisition Strategy air defense command followed and will be	Acquisition Strategy: The acquisition strategy relies heavily on non-developmental items (NDI) and evolutionary software development to rapidly overcome our current air defense command, control and intelligence deficiencies and to keep pace with the advancing technologies. The concept of evolutionary software development is being followed and will be accomplished in Blocks - I, II, III and IV. Blocks I and II have been completed. Block III is currently being developed.	s heavily on iencies and to III and IV.	non-develo keep pace Slocks I and	pmental iterr with the adv I II have beer	is (NDI) and ancing techr r completed.	on-developmental items (NDI) and evolutionary software development to rapidly overcome our current keep pace with the advancing technologies. The concept of evolutionary software development is being ocks I and II have been completed. Block III is currently being developed.	y software de e concept of currently be	evelopment evolutionar ing develop	to rapidly ov y software d oed.	vercome our levelopment	current is being
FY 1996 Accomplishments:	nments: Continued Block III Software Development Prepared for Block III Users Test Prepared for Technology Insertion	Developmer Fest rtion	¥								
FY 1997 Planned Program:	ogram: Conduct Block III Users Test (UT) Continue Block III Software Development Prepare for Block III Development Test (DT) Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs	(UT) Jevelopment ment Test (E search/Small	T) Business T	echnology T	ransfer (SB)	R/STTR) Pr	ograms				
FY 1998 Planned Program:	ogram: Digitization integration Continue Block III development Block III System Certification Test	nt Test									
Project D126				Page 2 of 7 Pages	7 Pages			Exhibi	Exhibit R-2 (PE 0604741A)	(604741A)	





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUSTI	FICAT	ION SH	EET (R	-2 Exhil	oit)		DATE Fet	February 1997	67
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	lopment		PE NU 060. Inte	PE NUMBER AND TITLE 0604741A Air D Intelligence - En	ir Defens - Engine	e Comm	DE NUMBER AND TITLE 0604741A Air Defense Command, Control, Intelligence - Engineering Development			PROJECT D126
FY 1999 Planned Program: 100 System Certification Test 1201 Complete Block III SW development 2247 Digitization integration 2150 Begin Block IV development Total 6698	ant									
B. Project Change Summary FY1997 President's Budget Appropriated Value		FY 1996 19281 19474	E 22 E	F 1997 20516 20031	FY 1998 14944	<u>FY 1999</u> 2042	<u>1999</u> 2042			
-508 FY 1998 Pres Bud Request Change Summary Explanation: Funding: FY98 (+3406) 2499 for digitization; 907 for Blk III SW development/FY99 (+4656) 3247 for digitization; 1409 to initiate Blk IV SW development	2499 for d	-308 18966 igitization;	20 907 for Bl	20031 BIk III SW de	18350 velopment/F	6698 Y99 (+4656)	98 5) 3247 for c	ligitization; 1	409 to initia	te Blk IV
C. Other Program Funding Summary									To	Total
RDTE, DEI0 - SENTINEL GBS	FY 1996 F 500	FY 1997	FY 1998	FY 1999	<u>FY 2000</u> 6094	FY 2001 9589	FY 2002 9289	FY 2003	Comp1	Cost 25472
	61882	68783	41014	40071	34283	51545	16688	34206	CONT	CONT
OPA 2, AD5050 - FAAD C2 OPA 2, AD5070 - AD TAC OPNS CTR	42880	36/15	13080	8262	0	0	0 14779	8261 14844	0 CONT	135157 CONT
Spares (BA9702/MA9702/BS9702) - FAAD C2 Spares (BS973BS97322) - SENTINAL GBS	1600 2324	1259 3610	1555 5258	885 5382	0	0 0	0	0	0	9617
D. Schedule Profile	FY 1996		,	FY 1997	•	FY 1998			FY 1999	
First Unit Equipped Block II X* System Certification Test System Certification Test System Certification Test First Unit Equipped - Objective System *Denotes completed milestone	۲	4	~ ×	m	4 - ×	7	د 4	- ×	e ×	4
Project D126		I	Page 3 of 7 Pages	Pages			Exhibit	Exhibit R-2 (PE 0604741A)	04741A)	
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RDT&E	PROGE	RDT&E PROGRAM ELEMENT/	:MENT/PRO	JECT (SOST BF	REAKDC	PROJECT COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	26
BUDGET ACTIVITY. 5 - Engineering and Manufacturing Developm	d Manufe	acturing D	evelopment		PE NUMBER AND TITLE 0604741A Air D Intelligence - Er	AND TITLE A Air Dei nce - Eng	fense Cor ineering I	PE NUMBER AND TITLE 0604741A Air Defense Command, Control, Intelligence - Engineering Development	ontrol, ent	.	РRОЈЕСТ D126
A. Project Cost Breakdown Major Contracts Support Contract PMO/In-house/Other GFE/Testing SBIR/STTR Total	uwo		·	FY 1996 15405 500 2542 519 18966	EY 1	(1997) 15301 1000 2414 909 407 20031	FY 1998 14821 1000 2229 300 18350	FY 1999 4949 200 1249 300 6698			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation g Activity Activity Leftice Date	History and I tions Contract Method/Type or Funding	Planning Info Award or Obligation Date	rmation Performin g Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
TRW C/CPIF TRW SS/CPIF TRW SS/CPIF TRW SS/CPIF TRW SS/T&M Matrix (RDEC) MIPR	Organizations C/CPIF SS/CPIF SS/CPIF SS/T&M MIPR	Sep 86 Aug 92 Sep 94 Sep 93	176461 32206 53194 4900	176461 32206 53194 4900	176461 32206 7700 1000 2163	14200 1205 1188	13311 1888 1072 407	12821 2000 1130	4949	CONT CONT CONT	176461 32206 52981 6093 6107
Support and Management Organizations SETA, CAS SS/CPFF Feb In-House/ Other	nent Organiza SS/CPFF	rtions Feb 91	10879	10879	10879	1854	2343	2099	895	CONT	10879
1 est and Evaluation Organizations ADATD, Ft Bliss OPTEC	ganizations				8687 2000	319	810	100	100	CONT	10016 2000
Project D126				Pag	Page 4 of 7 Pages	\$3.		Exhi	Exhibit R-3 (PE 0604741A)	0604741A)	
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RDT&E PROGRAM ELEMENT/PROJE	PROJECT COST BREAKDOWN (R-3)	REAKDO	OWN (R-	3)	DATE	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER 060474' Intellige	PE NUMBER AND TITLE 0604741A Air De Intelligence - Eng	PE NUMBER AND TITLE 0604741A Air Defense Command, Control, Intelligence - Engineering Development	mmand, C Developm			РRОЈЕСТ D126
Government Furnished Property Contract Method/Type Award or Item or Funding Obligation Delivery Description Vehicle Date Product Development Property CHS MIPR 1988 Support and Management Property: None Test and Evaluation Property: None	Total Prior to FY 1996 400 6000	<u>FY 1996</u> 200	FY 1997 200	<u>FY 1998</u> 200	FY 1999 200	Budget to Complete CONT	Total <u>Program</u> 1200 6000
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	225930 16987 10687 253604	16793 1854 319 18966	16878 2343 810 20031	16151 2099 100 18350	5703 895 100 6698		281455 24178 12016 317649
Project D126	Page 5 of 7 Pages	S2		Exh	Exhibit R-3 (PE 0604741A)	0604741A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	тем јиѕ	TIFICA	TION S	HEET (R	-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Jevelopm	ent	PE NI 060	PE NUMBER AND TITLE 0604741A Air Defense Command, Control, Intelligence - Engineering Development	ппе vir Defens - Engine	se Comr ering De	nand, Co	ntrol, nt	. U	РRОЈЕСТ D146
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D146 Air Defense Tactical Operations Center	2844	0	0	0	0	0	0	0	0 Continuing Continuing	Continuing

finances the direct costs of developing an ADTOC that will be used to provide a single system command, control, communications, and intelligence system that will support automated command post (CP) and fire direction center (FDC) capability that will fully interoperate with all US Army and Joint C3I and Air Defense systems, and selected systems of allied nations. These capabilities will be incorporated in an Air Defense Tactical Operations Center (ADTOC). The ADTOC must incorporate air defense and A. Mission Description and Justification: Project D146 - Air Defense Tactical Operations Center: Air Defense Artillery (ADA) requires a standardized, integrated, theater missile defense force operations and engagement operations functions into a single command, control, communications and intelligence system. Project D146 the requirements of any air defense weapon system at any echelon of Corps and below.

Acquisition Strategy: The acquisition strategy relies heavily on NDI and existing modules of Army/Joint/DoD software which will be integrated to provide a modular, reconfigurable, standard digital ADTOC for all air defense units, battery to brigade. Brigade ADTOCs will be automated first with expansion to all weapon systems.

FY 1996 Accomplishments:

284 Development and integration studies

Total 2844

FY 1997 Planned Program: Project not funded in FY 1997

FY 1998 Planned Program: Project not funded in FY 1998

FY 1999 Planned Program: Project not funded in FY 1999

B. Project Change Summary	FY 1996	FY 1997	FY 1998
FY 1997 President's Budget	896		
Appropriated Value	826		
Adjustments to Appropriated Value	+1866		
FY 1998 Pres Bud Request	2844		

FY 1999

Change Summary Explanation: Funding: FY 1996 (+1866) for unfunded ADTOC development.

Exhibit R-2 (PE 0604741A) Page 6 of 7 Pages Project D146





RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	CT COST BF	REAKDO	WN (R-	<u>@</u>	DATE Fe	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604741A Air D Intelligence - Er	AND TITLE A Air Det nce - Engi	fense Cor ineering I	PE NUMBER AND TITLE 0604741A Air Defense Command, Control, Intelligence - Engineering Development	ontrol, ent	d. 1	РRОЈЕСТ D146
A. Project Cost Breakdown Contracts In-house/Other Total	FY 1996 FY 1997 2221 623 2844		FY 1998	FY 1999			*****
B. Budget Acquisition History and Planning Information							
Performing Organizations Contractor or Contract Contract Government Method/Type Award or Performing Project Project Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations	oject Total Office Prior to EAC FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Misc. Contrs PWD Matrix Support MIPR Support and Management Organizations In-house/Other Test and Evaluation Organizations: None		2221 410 213					2221 410 213
Government Furnished Property: None							
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation		2631 213					2631
Total Project		2844					2844
Project D146	Page 7 of 7 Pages	S		Exhi	Exhibit R-3 (PE 0604741A)	0604741A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA"	TION SI	HEET (R	१-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	evelopm	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604746A Auto Development	TITLE Nutomatic nt	PE NUMBER AND TITLE 0604746A Automatic Test Equipment Development	uipment			
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	10648	9575	2582	2533	5365	4642	7589	7049	Continuing	Continuing
DL59 Diagnostic/Expert System Development	3732	9575	2582	2533	5365	4642	7589	7049	Continuing	Continuing
D537 Integrated Family of Test Equipment	6916	0	0	0	0	0	0	0	0	64290

missiles, aircraft, and combat vehicles. The Integrated Family of Test Equipment (IFTE), with improvements as required to keep pace with technologies employed in the procedures. These projects are appropriately assigned to Budget Activity 5, since they provide for engineering and manufacturing development of new ATE systems to Mission Description and Budget Item Justification: This program element provides for development of modular, reconfigurable automatic test equipment (ATE) to maintenance manuals/procedures and battlefield electronic displays which will reduce the Army's investment in test program sets and in maintenance publications and supported weapon systems, can meet these mission requirements into the next century. This program element further provides for identification and evaluation of the technologies. An urgent requirement exists at all levels of maintenance for ATE to support complex communications and electronics-intensive commodities such as capabilities of commercial and nondevelopmental items to satisfy requirements for manual and semi-automatic general purpose test, measurement, and diagnostic equipment at the division level. Expert systems and artificial intelligence applications are also being developed under this program element to provide paperless satisfy test and fault isolation requirements across equipment commodities and to meet operational readiness needs of sophisticated systems and state-of-the-art meet the test and diagnostic requirements of the Army's weapon systems, and for incorporation of state-of-the-art technologies into the Army's ATE systems.

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Exhibit R-2 (PE 0604746A)

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	TION SI	HEET (R	-2 Exhi	bit)		DATE Fet	February 1997	26
BUDGET ACTIVITY 5 - Engineerin	вирдет астіvіту 5 - Engineering and Manufacturing Developm	evelopm	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604746A Automatic Test Equipment Development	TITLE Nutomation	Test Eq	uipment			PROJECT DL59
0	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DL59 Diagnostic/Exp	Diagnostic/Expert System Development	3732	9575	2582	2533	5365	4642	7589	7049	Continuing	Continuing
A. Mission Descripe equipment are requireffectiveness of the Aequipment for: suppoof commercially avail hardware, and develoes expert systems and as be developed to meet	A. Mission Description and Justification: This project funds development of expert/diagnostic systems and general purpose test equipment. These systems and equipment are required to overcome existing deficiencies and voids in organic test and diagnostic capabilities and to ensure the operational readiness, accuracy, and effectiveness of the Army's weapons and combat support systems. The project provides for development of diagnostic technologies and state-of-the-art general purpose test equipment for: support to the Army's weapon systems, improvement of general purpose test equipment to meet new testing and technological requirements, market surveys of commercially available general purpose test equipment to determine applicability to Army requirements, evaluations of diagnostic software on targeted hardware, and development/evaluation of test programs sets (TPS) for use with standard automatic test equipment (ATE). Applications of state-of-the-art technologies in expert systems and artificial intelligence, paperless maintenance and troubleshooting manuals, electro-optics displays for battlefield use, and soldier-friendly equipment will be developed to meet identified requirements.	ject funds dicies and voi icies and voi pport system; ns, improver ment to dete ms sets (TPS aintenance a	evelopment ds in organic s. The projec nent of gener rmine applic of to use with the different coublesh	of expert/dii test and dit tt provides I ral purpose I ability to Ar h standard a ooting mani	agnostic syst agnostic cap: for developm test equipme my requiren utomatic tes uals, electro-	tems and ger abilities and tent of diagn int to meet notents, evalus t equipment optics displa	to ensure the costic techno sw testing ar tions and va (ATE). App	test equipmes operational logies and sind technological lidations of vications of vications of field use, an	ient. These standiness, a late-of-the-an sical requiren diagnostic sc state-of-the-id soldier-frie	ystems and ccuracy, and t general pur nents, marke oftware on tar art technolog endly equipm	pose test surveys geted jes in lent will
Acquisition Strateg otherwise, commerci nondevelopmental it	Acquisition Strategy: When the necessary expertise and capability are available within the Department of Defense, services are ordered from the government source; otherwise, commercial contracts are used. Equipment required for development projects is obtained by contract from the commercial supplier. Candidate nondevelopmental items (NDI) and commercial equipment are identified and evaluated through market surveys and bid sample testing.	and capabil nt required for pment are ic	ity are availa or developme entified and	the within that projects evaluated the	he Departme is obtained b ırough markı	ent of Defens by contract fi et surveys ar	se, services a om the com id bid sampl	re ordered f mercial supp e testing.	rom the gove olier. Candic	ernment sour late	;;
FY 1996 Accomplishments:	hments: Commenced development of software tools for new contact test sets (CTS). Performed bench testing of NDI equipment. Performed initial integration and testing of prototype Electro-Optic Test Facility.	oftware tool: Mequipmen: nd testing of	s for new cor t. prototype El	ntact test set.	s (CTS). Test Facility	·					
FY 1997 Planned Program:	ogram: Test new CTS hardware. Test new state-of-the-art commercial equipment for use in Army test equipment programs. Continue integration and testing of Electro-Optic Test Facility (EOTF). Continue development of software tools for new CTS. Complete development of Kiowa Warrior electronic TPS. Commence development/rehost of Apache TPS. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) P.	tercial equip g of Electro- vare tools foi wa Warrior e t of Apache earch/Small	oment for use -Optic Test F r new CTS. electronic TP TPS. I Business Ter	in Army ter acility (EO' S.	ment for use in Army test equipment programs. Optic Test Facility (EOTF). Thew CTS. lectronic TPS. TPS. Business Technology Transfer (SBIR/STTR) Program	programs.	ıgram				

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Exhibit R-2 (PE 0604746A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUSTIFICAT	TION SH	EET (R-	2 Exhib	Ē		DATE Feb	February 1997	76
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	opment	PE NUI 0604 Dev	PE NUMBER AND TITLE 0604746A Automatic Test Equipment Development	⊤∟E Jtomatic t	Test Equ	lipment		PR D	РRОЈЕСТ DL59
 FY 1998 Planned Program: 682 Continue to test new state-of-the-art commercial equipment for use in Army test equipment programs. 1200 Complete integration and testing of EOTF. 700 Complete development of software tools for new CTS. Total 2582 	commercial equipi EOTF. ools for new CTS.	ment for use	in Army test	equipment F	orograms.				
 FY 1999 Planned Program: 510 Continue to test new state-of-the-art commercial equipment for use in Army test equipment programs. 1000 Develop diagnostic software for use with Army automatic test equipment. 1023 Evaluate common solutions for Army and other Service test and diagnostic requirements. Total 2533 	commercial equip with Army autom: y and other Servic	ment for use atic test equip e test and dia	in Army test yment. gnostic requ	equipment Į irements.	orograms.				
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 5288 5437	FY	FY 1997 2793 9575	<u>FY 1998</u> 2770	FY 1999 2733	ତ୍ରୀ ଅ			
Adjustments to Appropriated Value FY 1998 Pres Bud Request	-1705 3732		9575	2582	2533	13			
Change Summary Explanation: FY 1996 adjustment reprogrammed for higher priority Army requirements.	grammed for high	er priority A	rmy requiren	nents.					
		FY 1998	FY 1999	$\overline{\mathrm{FY}2000}$	FY 2001	FY 2002	FY 2003	To Compl	Total Cost
facility 3 Facility	-	4321	17013	34625	5451	4464	1988	Cont	Cont Cont
	1933 4400	10507 5678	24164 3789	11432 3787	53308 2975	39380 1716	48894	Cont	Cont 17945
OPA2, KA4100, Electro Optic Equipment OPA3, MB4003, Electro Optic Equipment	3859		14262	5782	5423	8927	8944	Cont	Cont
D. Schedule Profile: Not Applicable.									
Project DL59		Page 3 of 9 Pages	9 Pages			Exhibi	Exhibit R-2 (PE 0604746A)	04746A)	
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RD.	RDT&E PROGRAM ELEMENT	RAM ELI	EMENT/PRO	JECT (SOST BE	ZEAKD (/PROJECT COST BREAKDOWN (R-3)	3)	DATE	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	g and Manu	facturing L)evelopment		PE NUMBER AND TITLE 0604746A Auto Development	AND TITLE A Auton	natic Test	PE NUMBER AND TITLE 0604746A Automatic Test Equipment Development			PROJECT DL59
A. Project Cost Breakdown Systems Engineering Software Development/Engineering Testing Miscellaneous SBIR/STTR Total	rcakdown g ient/Engineering			FY 1996 1932 592 734 474 3732	EY 1	1997 2187 5944 655 566 223 9575	EY 1998 1232 450 750 150 2582	EY 1999 983 1000 300 250 2533			
B. Budget Acquisition History and Planning Information	tion History and	Planning Infe	ormation								
Performing Organizations Contractor or Contract Government Method/Type Aperforming or Funding Activity Product Development Organizations	izations Contract Method/Type or Funding Vehicle	Award or Obligation <u>Oate</u>	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
McDonnell Douglas Corp., Huntington Beach,	SS/FFP	May 96	4100	4100	4100						4100
Honeywell, Inc.	SS/FFP	Apr 96	4675	4675	4675						4675
McDonnell Douglas Corp.,	SS/CPIF	Mar 96	8225	8225	8225						8225
Northrop Grumman, Bethoage, NY						1385	6152	006	200	Cont	8937
Other Contracts Gov't In-House SBIR/STTR Support and Management Organizations: None	gement Organiz	ations: None			35537 8260	1182	1889 1311 223	482 1200	833 1200	Cont	39923 13136 223
Project DL59				Pag	Page 4 of 9 Pages	۵		Exhi	Exhibit R-3 (PE 0604746A)	0604746A)	

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RDI	&E PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT	COST BI	REAKDO	JWN (R-	<u>@</u>	DATE F	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	g and Manu	facturing l	Development		PE NUMBER AND TITLE 0604746A Auto Development	tand TITLE A Autom ment	PE NUMBER AND TITLE 0604746A Automatic Test Equipment Development	Equipme	Jt.		PROJECT DL59
Contractor or Contract Government Method/Type Awarc Performing or Funding Obliga Activity Vehicle Date Test and Evaluation Organizations: None	Contract Method/Type or Funding Vehicle Organizations	Award or Obligation <u>Date</u> s: None	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to <u>Complete</u>	Total <u>Program</u>
Government Furnished Property: None.	thed Property:	None.									
Subtotal Product Development Subtotal Support and Management	velopment Management				26099	3732	9575	2582	2533		79219
Subtotal Test and Evaluation Total Project	aluation				26109	3732	9575	2582	2533		79219
Project DL59				Pa	Page 5 of 9 Pages	%		Ä	Exhibit R-3 (PE 0604746A)	0604746A)	
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION S	TIFICATION SHEET (R-2 Exhibit)	االا Exhi	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	evelopm	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604746A Automatic Test Equipment Development	ппсе Nutomatic nt	c Test Eo	uipment		d u	PROJECT D537
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D537 Integrated Family of Test Equipment	6916	0 .	0	0	0	0	0	0	0	64290

A. Mission Description and Justification: This project provides for development and upgrade of automatic test equipment (ATE) to support electronics-intensive weapon systems at all maintenance levels. The IFTE systems will automatically test and verify the operation of line replaceable units and screen shop replaceable units through use of test program sets (TPS) and software developed or upgraded under this project.

Acquisition Strategy: When the necessary expertise and capacity are available within the Department of Defense, services are ordered from the government source; otherwise, commercial contracts are used.

FY 1996 Accomplishments:

 SA Rehosted TPSs for use with Electronic Repair Shelter 1999 Developed/rehosted Kiowa Warrior and Apache TPSs for use with the Electro-Optics Test Facility 1125 Developed software interface for Contact Test Set, Soldier Portable On-System Repair Tool (CTS States) 	Kiowa Warrior improved processors lectronic Repair Shelter factionic Repair Shelter farrior and Apache TPSs for use with the Electro-Optics Test Facility for Contact Test Set, Soldier Portable On-System Repair Tool (CTS SPORT) with automated logistics systems.

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program: Project not funded in FY 99

Change Summary Explanation: FY 1996 adjustment reprogrammed for higher priority Army requirements.

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Project D537	

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Exhibit R-2 (PE 0604746A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICAT	FION SE	HEET (R	-2 Exhit	oit)		DATE Feb	February 1997	75
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developme	ent	PE NU 060	PE NUMBER AND TITLE 0604746A Automatic Test Equipment Development	TITLE utomatic It	Test Eq	uipment		R Q	PROJECT D537
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Compl	Total Cost
OPA2, K18400, Base Shop 1 est Facility OPA3, MB4001, Base Shop Test Facility	35511	1/0/6	4321	17013	34625	5451	4464	1988	Cont	307/36 Cont
OPA3, MB2201, Electronic Repair Shelter	1933	4400	10507 5678	24164 3789	11432 3787	53308 2975	39308 1716	48894	Cont	Cont 17945
OPA3, MB4003, Electro Optic Equipment OPA3, MB4003, Electro Optic Equipment	3839			14262	5782	5423	8927	8944	Cont	Secont
D. Schedule Profile: Not Applicable.			Page 7 of 9 Pages	9 Pages			m XX Did	Exhibit R-2 (PE 0604746A)	04746A)	
			858							Item 89



RDT8	RDT&E PROGRAM ELEMENT	RAM EL	EMENT/PR	/PROJECT	COST B	REAKDO	COST BREAKDOWN (R-3)	3)	DATE F	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	and Manu	acturing L)evelopment	4	PE NUMBER AND TITLE 0604746A Auto Development	AND TITLE A Autom ment	natic Test	PE NUMBER AND TITLE 0604746A Automatic Test Equipment Development			PROJECT D537
A. Project Cost Breakdown Systems Engineering Software Development Total	kdown t			FY 1996 1999 4917 6916		FY 1997	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information	n History and	Planning Info	<u>ormation</u>								
Organiza	tions										
t t	Contract Method/Type	Award or	Performing	Project	Total						
Performing c Activity	or Funding <u>Vehicle</u>	Obligation <u>Date</u>	Activity <u>EAC</u>	Office EAC	Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
t Developmen	t Organization	SI								•)
	C/CPAF	Varions	1961	1961	1961						1961
San Diego, CA Northrop	SS/FFP	Jan 95 -Jul	3856	3856	2340	1516					3856
Grumman,		96									
Bethpage, NY Grumman	Various	Various	40873	40873	40873						40873
Aerospace Corp., Bethnage, NY											
	SS/FFP	Oct 96	3738	3738		3738					3738
Albuquerque, NM Other Contracts					2934	1264					4108
Gov't In-House					8592	398					0668
rundea Keqsins					6/4						674
Government Furnished Property: Not Applicable.	ed Property:	Not Applicable	.:								
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Project D33/				Pag	Page 8 of 9 Pages	S		Exhi	Exhibit R-3 (PE 0604746A)	0604746A)	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	T COST BF	REAKDO	WN (R-	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604746A Auto Development	AND TITLE A Autom ment	atic Test	PE NUMBER AND TITLE 0604746A Automatic Test Equipment Development		. O	PROJECT D537
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1996 57374 57374	FY 1996 6916 6916	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program 64290
				L			
Project D537	rage y of y rages	Sč		EXU	EXNIBIT K-3 (PE UBU4/46A)	U004/40A)	Itom 80

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UL MƏTI TƏDQUB 38108	FEM JUS	TIFICA	TION SI	HEET (F	STIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developi	Jevelopm	nent	PE N 060	PE NUMBER AND TITLE 0604760A Distr Engineering Dev	PE NUMBER AND TITLE 0604760A Distributive Interactive Simulations Engineering Development	ve Intera	ctive Sin	ulations		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	15631	20895	9242	18603	15974	16466	16914	Continuing	Continuing
DC73 Synthetic Theater of War	0	10033	5837	0	0	0	0	0	0	15870
DC74 Developmental Simulation Technology	0	2577	2436	3008	3252	3593	3702	3801	Continuing	Continuing
DC77 Interactive Simulation	0	3021	8622	4224	9092	8391	8780	8928	Continuing	Continuing
DC78 Computer Generated Forces*	0	0	4000	2010	2986	3990	3984	4185	Continuing	Continuing

Project DC78 is not a new start, but rather a realignment of funds from Interactive Simulation (DC77) to more appropriately identify/manage accomplishments of Computer Generated Forces as determined by the Army Modeling Simulation Office (AMSO).

synthetic environment is used to verify the scenarios, tactics/techniques and procedures, train testers on new hardware/software and conduct trial test runs before costly live Army and DoD by providing standards for interoperability and software reuse in this emerging domain. This Program Element supports research efforts in the engineering forces software systems which support experimentation, concept evaluation, materiel development and training. Work done on this program will have benefit across the development and application of DIS technology to electronically link all subcomponents together to recreate a scaleable battlefield, both horizontally and vertically. The systematic connection of different subcomponent simulations, simulators and/or instrumented live task forces. These DIS components may reside at multiple and distant locations, using different simulation equipment, tied together through use of a standard communication architecture. This Program Element provides for the engineering field tests. Project DC73, Synthetic Theater of War, supports engineering development and integration of the Synthetic Theater of War-Army (STOW-A) and Force XXI. Project DC74, Developmental Simulation Technology, provides engineering development of DIS tools, techniques, standards and applications in support of the Army's Mission Description and Budget Item Justification: Distributed Interactive Simulation (DIS) is a synthetic environment within which humans may interact through a engineering development of techniques and technology for DIS and related simulations and simulator efforts. Project DC78 develops and upgrades computer generated Core DIS Facilities (CDF) at Forts Knox, Benning and Rucker, and the Operational Support Facility in Orlando, FL. Project DC77, Interactive Simulation, focuses on and manufacturing development phases of the acquisition cycle and therefore is correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604760A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	IS NOIL	HEET (R	8-2 Exhi	bit)		DAIE Fel	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Developm	ent	PE N 060	PE NUMBER AND TITLE 0604760A Distributive Inte	ппс Distributiv J Develop	ve Intera	ENUMBER AND TITLE 3604760A Distributive Interactive Simulations Engineering Development	ulations	ı	РРОЈЕСТ DC73
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC73 Synthetic Theater of War	0	10033	5837	0	0	0	0	0	0	15870

A. Mission Description and Justification: Project DC73 - Synthetic Theater of War: This project supports engineering development and integration of the Synthetic Theater of War (STOW) and Force XXI. Development focuses on leveraging existing and emerging technology in a manner that produces substantial and continual improvements in combat readiness through the use of full spectrum, high fidelity, distributed simulation capability to support a large scale DIS user based exercise/experiment for JOINT VENTURE training and analytical needs.

Acquisition Strategy: Development and procurement through delivery orders to competitively selected contractors providing Systems Engineering and Integration and Advanced Development Simulation Technology, based on performance specifications.

FY 1996 Accomplishments: Project not funded

FY 1997 Planned Program:

- Develop and apply distributed simulation technology to support the Synthetic Theater of War.
- Conduct Army Model and Simulation assessment and develop an interactive database catalog of Army systems and their characteristics. 1330
 - Develop and integrate emerging simulation technology in support of Force XXI training program. 5461
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 245
 - 0033

FY 1998 Planned Program:

- Continue development of distributed simulation technology to support the Synthetic Theater of War. 4837
 - Develop and integrate emerging simulation technology in support of Force XXI training program. 1000 5837
 - Total

FY 1999 Planned Program: Project not funded in FY 99.

Project DC73

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Exhibit R-2 (PE 0604760A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICAT	HS NOI	IEET (R	-2 Exhil	bit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Developme	ent	PE NU 060	PE NUMBER AND TITLE 0604760A Distr Engineering De	PE NUMBER AND TITLE 0604760A Distributive Inte Engineering Development	PE NUMBER AND TITLE 0604760A Distributive Interactive Simulations Engineering Development	tive Sim	ulations	- -	PROJECT DC73
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud		FY 1996 0 0 0 0	E	EX 1997 10248 10033 0	FY 1998 6287 5837	FY 1999 0	99 0 0			
C. Other Program Funding Summary OPA3, KA6000, Reconfigurable Simulators RDTE, A Budget Activity 5, PE0604715A,	FY 1996 12222 5685	FY 1997 13825 0	FX 1998 13823 0	FY 1999 12803 0	EY 2000 8997 0	FY 2001 8282 0	FY 2002 4960 0	FY 2003 4969 0	To Compl Cont'd 0	Total Cost Cont'd 5685
OMA, Reconfigurable Simulators	12100	10899	10070	7150	0599	8150	11950	11950	Cont'd	Cont'd
D. <u>Schedule Profile</u>	FY 1996	~	FY	FY 1997	-	FY 1998		- -	Y 199	
Award Engr & Integration Contract	7		*	n	, ×		J	-	n	4
*Milestone Complete										
Project DC73		I	Page 3 of 15 Pages	Pages			Exhibit	Exhibit R-2 (PE 0604760A)	04760A)	

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RDT	RDT&E PROGRAM ELEMENT/I	RAM EL	EMENT/PRO	SJECT (SOST BF	REAKDO	PROJECT COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	97
вирсет астіvіту 5 - Engineering and Manufacturing Development	g and Manu	facturing [Jevelopment		PE NUMBER AND TITLE 0604760A Distr Engineering Dev	AND TITLE IA Distrik ring Deve	PE NUMBER AND TITLE 0604760A Distributive Inte Engineering Development	ਮਸ਼ਾ Distributive Interactive Simulations g Development	mulations	ı	PROJECT DC73
A. <u>Project Cost Breakdown</u> Systems Engineering & Integration Hardware Design & Development Reliability, Availability and Maintainability Training Support Packages Verification, Validation & Accreditation SBIR/STTR Total	eakdown & & Integration Development lity and Maintain ckages ion & Accredita	nability tion	a cita	FY 1996	五 1	FY 1997 2868 1750 738 4027 405 245 10033	FY 1998 4043 490 920 0 384 5837	FY 1999			
Performing Organizations Contractor or Contra Government Metho Performing or Fun Activity	izations Contract Method/Type or Funding	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations Lockheed-Martin, DO/CPAF	ent Organization DO/CPAF	ns Nov 96	6809	6809	0	0	2849	3240	0	0	6809
Orlando, Fl Cubic Applications	DO/CPIF	Jan 97	TBD	1330	0	0	1290	0	0	0	1290
Inc., Lacey, WA ARI, Alexandria,	DO/CPIF	Feb 97	TBD	4710	0	0	3747	963	0	0	4710
VA SBIR/STTR							245				245
Support and Management Organizations Miscellaneous Various Vario	gement Organiz Various	zations Various	2707	2707	0	0	1497	1250	0	0	2747
Test and Evaluation Organizations Miscellaneous Various	n Organizations Various	s Various	789	789	0	0	405	384	0	0	789
Project DC73				Pag	Page 4 of 15 Pages	<i>8</i>		Exh	Exhibit R-3 (PE 0604760A)	0604760A)	
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BREAKDO	JWN (R-3		DATE Fe	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604760A Distributive Interactive Simulations Engineering Development	outive Inter elopment	active Si	mulations	•	PROJECT DC73
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1996 FY 1996	EY 1997 8131 1497 405 10033	FY 1998 4203 1250 384 5837	FY 1999	Budget to Complete	Total Program 12334 2747 789 15870
Project DC73	Page 5 of 15 Pages		Exhi	Exhibit R-3 (PE 0604760A))604760A)	
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	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SE	HEET (R	IIFICATION SHEET (R-2 Exhibit)	oit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 5 - Engineering	вирдет астіvіту 5 - Engineering and Manufacturing Developme	evelopmo	ent.	PE NU 060 Enç	PE NUMBER AND TITLE 0604760A Distr Engineering De	PE NUMBER AND TITLE 0604760A Distributive Interactive Simulations Engineering Development	re Interac ment	tive Sim	ulations		PROJECT DC74
O	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC74 Developmental	Developmental Simulation Technology	0	2577	2436	3008	3525	3593	3702	3801	Continuing	Continuing
A. Mission Descrip (DIS) Facilities (CD battlefield with the v	A. Mission Description and Justification: Project DC74 - Developmental Simulation Technology: This project supports the Core Distributed Interactive Simulation (DIS) Facilities (CDF) at Fort Knox, KY, Fort Rucker, AL, Fort Benning, GA and the Operational Support Facility in Orlando, FL, which provide virtual combined arms battlefield with the warfighter-in-the-loop to evaluate weapon system concepts, tactics, doctrine and test plans.	ct DC74 - De er, AL, Fort le te weapon sys	velopment Senning, G. tem concep	al Simulatio A and the Op ots, tactics, do	n Technolo erational Su octrine and t	gy: This pro pport Facilit est plans.	ject support: y in Orlando	s the Core D	istributed Int provide virt	teractive Sir ual combine	nulation d arms
Acquisition Strateg	Acquisition Strategy: Competitive development leading to comp	ading to com	petitive pro	curement ag	ainst perforr	etitive procurement against performance specifications	cations				
FY 1996 Accomplis	FY 1996 Accomplishments: Development activities funded in PE	s funded in P		A, Major Tes	t and Evalua	tion, Project	DC55, Dist	ributive Dev	0604759A, Major Test and Evaluation, Project DC55, Distributive Dev Simulation Technology.	Technology	
FY 1997 Planned Program: • 1150 Develor	rogram: Develop DIS tools such as exercise conduct	ercise conduc	t and visual	systems gen	ıeration, whi	ch enable co	mbat, materi	iel and traini	and visual systems generation, which enable combat, materiel and training developers and testers to	rs and tester	s to
• 1364 • 63 Total 2577	pertorn experiments to test tactics, doctrine Continue development and systems integrati Small Business Innovation Research/Small I	ictics, doctrin stems integra search/Small	e and weapon design. tion of new and emer Business Technology	on design. / and emergi echnology T	ng equipmer ransfer (SB)	and weapon design. ion of new and emerging equipment and software techr Business Technology Transfer (SBIR/STTR) Programs.	re technolog ograms.	gy for use in	and weapon design. ion of new and emerging equipment and software technology for use in the Core DIS Facilities. Business Technology Transfer (SBIR/STTR) Programs.	S Facilities.	
FY 1998 Planned Program:	rogram:										
006		Network wh luation, and n	ch will inte ateriel acqu	grate techno nisition.	logies to pro	vide dismou	nted and sm	all unit simu	lation capab	ility to supp	tic tic
• 850 • 686 Total 2436	Continue development of tools which provide improved capabilities for experiment and exercise generation and after-action analysis. Continue development and systems integration of new and emerging equipment and software technology for use in the Core DIS Facilities.	s which prov stems integra	de improve tion of new	d capabilitie / and emergi	s for experii ng equipmer	nent and exe ıt and softwa	rcise general re technolog	tion and afte sy for use in	r-action anal the Core DIS	lysis. S Facilities.	
FY 1999 Planned Program: 3008 Continu	rogram: Continue development of Advanced Distributed Simulation Technology support which enables combat, materiel and training developers and testers to	/anced Distril	outed Simul	ation Techno	ology suppo	t which enab	eles combat,	materiel anc	l training dev	velopers and	testers to
Total 3008	periorm experiments to test tactics, doctrine	ictics, doctrin	e and weapon design	on design.							· · · · · · · · · · · · · · · · · · ·
Project DC74				Page 6 of 15 Pages	'5 Pages			Exhibi	Exhibit R-2 (PE 0604760A)	604760A)	
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RDT&E BUDGET	BUDGET ITEM JUSTIFICATION SHEET	TIFICAT	HS NOI.	IEET (R	(R-2 Exhibit)	bit)		DATE Fet	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	g Developm	ent	PE NU 060 4 Eng	PE NUMBER AND TITLE 0604760A Distributive Inte	тге istributiv Develop	PE NUMBER AND TITLE 0604760A Distributive Interactive Simulations Engineering Development	tive Sim	ulations	- -	PROJECT DC74
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud		FY 1996 0 0 0 0	FY	FY 1997 2632 2577 0 2577	FY 1998 2615 2436	FY 1999 3249 3008	6) 6;			
C. Other Program Funding Summary RDTE, A Budget Activity 5, PE 0604715A,	FY 1996 5685	$\frac{\text{FY } 1997}{0}$	FY 1998 0	FY 1999 0	$\overline{\text{FY}\ 2000}}$	FY 2001	FY 2002 0	$\frac{\text{FY } 2003}{0}$	To Compl 0	Total Cost 9370
Project DC91, Distr Interactive Simulation RDTE, A Budget Activity 5, PE 0604760A,	0	3021	8622	4224	9092	8391	8780	8928	Cont'd	Cont'd
Project DC//, interactive Simulation OPA3, KA6000, Reconfigurable Simulators OMA, Reconfigurable Simulators	12222 12100	13825 10899	13823 10070	12803 7150	8997	8282	4960 11950	4969 11950	Cont'd Cont'd	Cont'd Cont'd
D. Schedule Profile	FY 1996	-	F. C	FY 1997	-	FY 1998	∞ r	-	FY 1999	•
Advanced Distributed Simulation Technology (ADST) II Delivery Order Contract Award) 1		1 *×	n	- ×	٧		· -×		1
*Milestone Complete										
Project DC74			Page 7 of 15 Pages	5 Pages			Exhibi	Exhibit R-2 (PE 0604760A)	304760A)	
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	GRAM EL	EMENT/PR	OJECT (SOST BI	ZEAKD	OWN (R-	3)	DATE FO	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	nufacturing [Development		PE NUMBER AND TITLE 0604760A Distr Engineering De	AND TITLE A Distri ring Dev	PE NUMBER AND TITLE 0604760A Distributive Interactive Simulations Engineering Development	ractive Si	mulations	ı	PROJECT DC74
A. Project Cost Breakdown Systems Engineering & Integration Primary Hardware Development Reliability, Availability and Maintainability SBIR/STTR Total	n tainability		FY 1996 0 0	FY	FY 1997 1689 425 400 63 2577	FY 1998 1486 600 350 2436	FY 1999 1847 675 486 3008			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Active Activity Vehicle Date E	und Planning Inf	ormation Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Lockheed-Martin, DO/CPAF Orlando, FL	Nov 96	TBD	TBD	0	0	1905	1796	2260	Cont'd	5961
SBIR/STTR Support and Management Organizations Miscellaneous Various Vario	nizations Various	TBD	TBD	0	0	63	440	448	Cont'd	63
l est & Evaluation Organizations Miscellaneous Various	s Various	TBD	TBD	0	0	200	200	300	Cont'd	700
Subtotal Product Development Subtotal Support and Management	-					1968	1796 640	2260 748		6024
Total Project						2577	2436	3008		8021
Project DC74			Page	Page 8 of 15 Pages	es		Exh	Exhibit R-3 (PE 0604760A)	0604760A)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SOC MEI	TIFICA'	TION S	JEET (R	१-2 Exhi	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Jevelopm	lent	PE NI 060 En ç	PE NUMBER AND TITLE 0604760A Distr Engineering Dev	PE NUMBER AND TITLE 0604760A Distributive Interactive Simulations Engineering Development	ve Intera	ctive Sim	ulations	,	эколест DC77
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC77 Interactive Simulation	0	. 3021	8622	4224	9092	8391	8780	8928	8928 Continuing Continuing	Continuing

A. Mission Description and Justification: Project DC77 - Interactive Simulation: This project focuses on engineering development of techniques and DIS technology simulations. Development also supports related simulations and simulator efforts, including the Battlelab Reconfigurable Simulators. Development activities associated of wide area simulation networking in support of modeling and simulation, doctrinal development, training, and operations, utilizing live, virtual and constructive with this project were budgeted in Program Element 0604715A, Non-System Training Devices Engineering Development, Project DC91, Distributive Interactive Simulation, in FY 1995 and FY 1996.

Acquisition Strategy: Competitive development leading to competitive procurement against performance specifications

FY 1996 Accomplishments: Funded under Project DC 91, Distributive Interactive Simulation, PE 0604715A

FY 1997 Planned Program:

- Provide systems engineering and develop standards, interoperability and accreditation processes, and DIS tools to support the synthetic environment. 508 450
 - Develop software upgrades/enhancements to support the re-architecture of modular semi-automated forces (MODSAF) computer generated forces
- Continue development of the Ground, Early Entry Operations, and Aviation Battlelab Reconfigurable Simulators. 6861
 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
 - 3021 Total

FY 1998 Planned Program:

- Provide systems engineering and continue development of standards, interoperability and accreditation processes, and DIS tools to support the 1087
- Continue development of the Aviation, C4I and Dismounted Infantry Battlelab Reconfigurable Simulators. synthetic environment. 6535
 - Develop improved representation of C4I and environmental effects in the synthetic environment 1000 8622

Project DC77

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Exhibit R-2 (PE 0604760A)

RDT&E BUDGET ITEM JUST	ITEM JUS		ION SH	EET (R	FICATION SHEET (R-2 Exhibit)	oit)		DATE Feb	February 1997	76
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	y Developme	ant	PE NUN 0604 Engi	PE NUMBER AND TITLE 0604760A Distr Engineering De	PE NUMBER AND TITLE 0604760A Distributive Inte Engineering Development	ve Interac ment	tive Sim	D TITLE Distributive Interactive Simulations ig Development	PR DO	PROJECT DC77
 FY 1999 Planned Program: 2424 Provide systems engineering and continue development of standards, interoperability and accreditation processes, and DIS tools to support the synthetic environment. 1000 Continue development of the C4I and Dismounted Infantry Battlelab reconfigurable simulators. 800 Develop dynamic terrain and mobility models for use by the simulation community. Total 4224 	ng and continue of the C4I and Dismind mobility mod	development counted Infar els for use by	of standards ntry Battlelab y the simulat	s, interopera o reconfigur ion commu	bility and ac able simulat nity.	creditation ors.	processes, a	nd DIS tools	to support the	ø)
B. Project Change Summary FY 1997 President's Budget Appropriated Value Admstracts to Appropriated Value		FY 1996 0 0 0	EX	FY 1997 3086 3021 0	FY 1998 10956	FY 1999 6737	37			
FY 1998 Pres Bud		0		3021	8622	4224	24			
Change Summary Explanation: Funding: FY 98(-2334)/FY 99(-2513) funds moved to Computer Generated Forces (DC78) for central management/accomplishment identity as determined by the Army Modeling Simulation Office (AMSO).	unds moved to C Simulation Office	omputer Ger (AMSO).	nerated Force	es (DC78) f	or central ma	anagement/a	ıccomplishn	nent identity		
C. Other Program Funding Summary	FV 1006	FV 1907	FV 1998	FV 1999	FV 2000	FV 2001	FV 2002	FV 2003	To	Total
RDTE, A Budget Activity 5, PE 0604715A,	5685	0	0	0	0	0	0	0	0	9370
OPA3, KA6000, Reconfigurable Simulators OMA, Reconfigurable Simulators	12222 12100	13825 10899	13823 10070	12803 7150	8997 6650	8282 8150	4960 11950	4979 11950	Cont'd Cont'd	Cont'd Cont'd
D. Schedule Profile	FY 1996	4	1 2	FY 1997	1	FY 1998	98 3 4		FY 1999	4
Advanced Distributed Simulation Technology II Delivery Order Contract		,	**	ì	· ×	1		· ·×		-
Software Engineering Institute (SEI) Delivery Order Contract Award			**		×			×		
Project DC77			Page 10 of 15 Pages	5 Pages			Exhib	Exhibit R-2 (PE 0604760A)	604760A)	
			870							Item 90





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604760A Distributive Interactive Simulations - Engineering Development	PROJECT Simulations - DC77
	<u>661</u>	FY 1999
BLRSI (Battlelab Reconfigurable X* Simulator) Option Contract Award		X X X
* Milestones Complete		
Project DC77	Page 11 of 15 Pages E)	Exhibit R-2 (PE 0604760A)
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RDI	&E PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT	OJECT (SOST B	REAKDO	COST BREAKDOWN (R-3)	<u>®</u>	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	g and Manu	facturing [Jevelopment		PE NUMBER AND TITLE 0604760A Distr Engineering Dev	PE NUMBER AND TITLE 0604760A Distributive Inte Engineering Development	⊃ TITLE Distributive Interactive Simulations ig Development	ractive Si	mulations	,	PROJECT DC77
A. Project Cost Breakdown Systems Engineering & Integration Develop DIS tools, techniques, standards Reconfigureable Simulator Hardware/Software Development SBIR/STTR Total	eakdown s & Integration echniques, stand iulator Hardware	lards 2/Software Dev	·elopment	FY 1996		FY 1997 500 458 1989 74 3021	FY 1998 1337 750 6535 8622	FY 1999 2324 900 1000			
B. Budget Acquisition History and Planning Information Performing Organizations	ion History and zations	l Planning Inf	ormation								
Government Method/Type Activity Vehicle I	Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Hughes Training	CPIF	Feb97	TBD	TBD	0	0	487	4456	300	Cont'd	5243
Lockheed-Martin, Orlando, FL	DO/CPAF	Oct96	TBD	TBD	0	0	988	2021	2845	Cont'd	5752
Support and Management Organizations Miscellaneous Various Vario SBIR/STTR	gement Organiz Various	zations Various	ТВД	TBD	0	0	1349	1725	849	Cont'd	3923 74
Miscellaneous Various	organizations Various	Various	TBD	TBD	0	0	225	420	230	Cont'd	875
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	velopment I Management aluation						1373 1423 225 3021	6477 1725 420 8622	3145 849 230 4224		10995 3997 875 15867
Project DC77		:		Page	Page 12 of 15 Pages	səs		Exhil	Exhibit R-3 (PE 0604760A))604760A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SUL ME	TIFICA.	TION SI	HEET (R	اا	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Jevelopm	ent	PE NI 060 En	PE NUMBER AND TITLE 0604760A Distr Engineering Dev	ENUMBER AND TITLE 0604760A Distributive Interactive Simulations Engineering Development	ve Interac	ctive Sim	ulations	а -	PROJECT DC78
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC78 Computer Generated Forces*	0	0	4000	2010	5986	3990	3984	4185	4185 Continuing Continuing	Continuing

initiatives include the systems engineering and design for improvements to the architecture and interoperability of Army SAFs, and the evolution to an Army universal realistically represent activities of units and forces in simulation. This representation is used to support concept evaluation, experimentation, materiel acquisition and training communities. This project funds improvements, new functionality, enhancements and re-architecture of Modular Semi-Automated Forces (ModSAF). Other Project DC78 - Computer Generated Forces: This project provides for the development of software systems to A. Mission Description and Justification: computer generated forces system.

Acquisition Strategy: Competitive development leading to competitive procurements against performance specifications.

FY 1996 Accomplishments: Funded within Project DC 91, Distributive Interactive Simulation, PE 0604715A.

FY 1997 Planned Program: Funded within Project DC 77, Interactive Simulation, PE 0604760A.

FY 1998 Planned Program:

- Develop and integrate expansion of ModSAF battlefield operating systems representation/upper echelon behavior capabilities.
- Development/re-architecture of ModSAF to provide for High Level Architecture (HLA) and Close Combat Tactical Trainer (CCTT) SAF 2615
- compatibility.
- Verification and validation of newly integrated software.
 - 4000 Total

FY 1999 Planned Program:

- Develop and integrate expansion of ModSAF battlefield operating systems representation/upper echelon behavior capabilities.
- Continue engineering development of the ModSAF-CCTT Semi-Automated Forces merge.
- Verification and validation of newly integrated software. 1420 280

Project DC78

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RDT&E BUDGET ITEM JUST	EM JUS	TIFICATION SHEET (R-2 Exhibit)	ION SH	EET (R	-2 Exhil	oit)		DATE Fet	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopmo	ent	PE NUI 0604 Eng	PE NUMBER AND TITLE 0604760A Distr Engineering Dev	PE NUMBER AND TITLE 0604760A Distributive Inte Engineering Development	e Intera	ctive Sim	D TITLE Distributive Interactive Simulations ig Development		PROJECT DC78
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud		FY 1996 0 0 0	FY	FY 1997 0 0 0 0	FY 1998 0 4000	FY 1999 0 2010	0 0 0			
Change Summary Explanation: Funding: FY 98(+4000)/FY 99(+2010) funds moved from Interactive Simulation (DC77) to more appropriately identify/manage accomplishments of Computer Generated Forces (DC78) as determined by the Army Modeling Simulation Office (AMSO).	lds moved fro determined by	m Interactive Simulation (DC77) to more approprive the Army Modeling Simulation Office (AMSO)	Simulation Iodeling Si	. (DC77) to 1 mulation Of	nore approp ffice (AMSC	riately iden)).	ify/manage	accomplishm	nents	
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
RDTE, A Budget Activity 5, PE 0604715A, Project DC91 Distributive Interactive Simulation	5895	0	0	0	0	0	0	0	Comp.	<u>Cost</u> 5685
RDTE, A Budget Activity 5, PE 0604760A, Project DC77, Interactive Simulation	0	3021	8622	4224	9092	8391	8780	8928	Cont'd	Cont'd
D. Schedule Profile	Y 199	-	FY	FY 1997		FY 1998			Y 199	•
ADST II Delivery Order Contract Award	1	4	7	n	4 - X	7	£ 4	- ×	3	4
·										
Project DC78		P	Page 14 of 15 Pages	5 Pages			Exhibi	Exhibit R-2 (PE 0604760A)	304760A)	
			874							Item 90

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	RAM EL	EMENT/PR	OJECT	COST B	REAKD	OWN (R-	3)	DATE F .	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	acturing l	Developmen		PE NUMBER AND TITLE 0604760A Distr Engineering Dev	AND TITLE IA Distril ring Dev	PE NUMBER AND TITLE 0604760A Distributive Inte Engineering Development	PE NUMBER AND TITLE 0604760A Distributive Interactive Simulations Engineering Development	imulation		PROJECT DC78
A. Project Cost Breakdown Engineering Development and Integration Verification and Validation Total	ıtion		FY 1996		FY 1997	EY 1998 3515 485 4000	FX 1999 1720 290 2010	8 0 0		
B. Budget Acquisition History and Planning Information	Planning Inf	<u>ormation</u>								
Performing Organizations Contractor or										
elonmen	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Lockheed-Martin DO/CPAF	Dec 98	TBD	TBD	0	0	0	2915	1150	Cont'd	4065
Support and Management Organizations Miscellaneous Various Vario Test and Evaluation Organizations	itions Various	TBD	TBD	0	0	0	009	570	Cont'd	1170
Miscellaneous Various	Various	TBD	TBD	0	0	0	485	290	Cont'd	775
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project							2915 600 485 4000	1150 570 290 2010		4065 1170 775 6010
			,	; ;			i			
Froject DC/8			Page	Page 15 of 15 Pages	Sa		Exhi	Exhibit R-3 (PE 0604760A)	3604760A)	

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA.	FION SI	FIFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE Fet	February 1997	97
вирсет АстіVITY 5 - Engineering and Manufacturing Development	Developm	ent	PENU 060 Cap	PE NUMBER AND TITLE 0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering & Manufacturing Development (TIARA)	וחנה actical E (TENCAI ng Devel	xploitatio P) - Engii opment (on of Nat neering 8 TIARA)	ional	<u>a</u> 0	PROJECT D909
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D909 Tactiical Exploitation of National Capabilities - Eng Dev	23266	15235	19113	19531	26094	25097	28203	28359	28359 Continuing Continuing	Continuing

(CIGSS) program. TES brings all of the existing and emerging Army TENCAP capabilities (AEPDS, MIES, and ETRAC) into an integrated common baseline; downsized, Congressional Justification Book, Volume II and in the Army TENCAP Master Plan. This PE supports research efforts in the engineering and manufacturing development activities and ongoing/planned initiatives determined to have potential application to multiple TENCAP systems [including MIES and ETRAC that are funded under the Tactical Exploitation System (TES). The Army's emerging TES will incorporate the standards and protocols dictated by the Common Imagery Ground/Surface System (ETUT), Mobile Integrated Tactical Terminal (MITT), Forward Area Support Terminal (FAST), Advanced Electronic Processing Dissemination System (AEPDS) and A. Mission Description and Budget Item Justification: This project supports the engineering development/enhancement of the Electronic Tactical User Terminal modular and scaleable to meet a wide range of contingency requirements. TENCAP Common Baseline addresses common subsystems, planned improvements, key Defense Airborne Reconnaissance Program (DARP) (PE 0305154D)]. Specific details are provided in the Tactical Intelligence and Related Activities (TIARA) phases of the acquisition strategy and is therefore correctly placed in Budget Activity 5. Acquisition Strategy: The Army Space Program Office (ASPO) strives for an acquisition environment emphasizing stable funding, low density acquisition, minimal use of software, ASPO minimizes risk while maximizing efficiency. Finally, dedicated cradle to grave Integrated Logistics Support (ILS) for TENCAP systems is accomplished MILSPECS, and managed competition. By tailoring existing technology, leveraging the best commercial practices, and using commercial and government off-the-shelf through a coordinated effort by government and contractor personnel and facilities.

FY 1996 Accomplishments:

•	12102	12102 Continued software upgrades and enhancements for the refinement of the TENCAP Common Baseline to fully exploit national capabilities such as
		integration of communications capabilities to meet changing architectures and implementation of software appliqué to provide the operational
		commander with enhanced battlefield intelligence products.
•	909	Completed the retrofit of ETUT with enhanced MITT hardware and software.
•	2356	2356 Continued effort to combine ETUT and EPDS capabilities into AEPDS.
•	006	900 Completed building/fielding of five additional MITTs.
•	1094	Initiated engineering development of TES.
.•	6208	Continued support to TENCAP program management and administrative activities [e.g. FFRDC (Aerospace), ARL support, ASPO support, Army
		Topographic Engineering Center (TEC) and Contractor SETA support].
Total	23266	



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Exhibit R-2 (PE 0604766A)

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Project D909

		RDT&E BUDGET ITEM JUSTIFICATION S	STIFICATION SHEET (R-2 Exhibit)	DATE
BUDGET ACTIVITY 5 - Engineeri	neerin	PE N SUDGET ACTIVITY 5 - Engineering and Manufacturing Development O6 Ca Ma	PE NUMBER AND TITLE 0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering & Manufacturing Development (TIARA)	rebruary 1997 PROJECT
FY 1997 Planned Program: 4608 Continuintegrat comma	lanned P 4608 5106	ie software upgrades and enhancements for the refinemion of communications capabilities to meet changing a nder with enhanced battlefield intelligence products.	t of the TENCAP Common Baseline to fully exploit naitectures and implementation of software appliqué to p	ational capabilities such as provide the operational
• •	2197 2958	Continue engineering development of TES. Complete effort to combine ETUT and EPDS capabilities into AEPDS. Continue support to TENCAP program management and administrative activities [e.g. FFRDC (Aerospace), ARL support, ASPO support, Army Tonographic Engineering Continue (TES).	3PDS. trative activities [e.g. FFRDC (Aerospace), ARL supp	oort, ASPO support , Army
• Total	366 15235	Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR)	pport. ınology Transfer (STTR)	
FY 1998 Planned Program: • 6965 Continuingration	anned P. 6965	rogram: Continue software upgrades and enhancements for the refinement of the TENCAP Common Baseline to fully exploit national capabilities such as integration of communications capabilities to meet changing architectures and implementation of software appliqué to provide the operational commander with enhanced battlefield intelligence products. In addition to staying current with national and theater canabilities will include	of the TENCAP Common Baseline to fully exploit na itectures and implementation of software appliqué to polition to staying current with national and theater care	ational capabilities such as provide the operational
• •	8585 3563	integration of Global Broadcast System (GBS) and the Joint Tactical Terminal (JTT) into the TENCAP systems. Continue engineering development of TES. Continue support to TENCAP program management and administrative activities fear FFRDC (Agramma), ADT	(GBS) and the Joint Tactical Terminal (JTT) into the TENCAP systems. 3S. nanagement and administrative activities fear FFRDC (Agraement) ADL	
Total	19113	Topographic Engineering Center (TEC) and Contractor SETA support].	port].	ott, ASPO support, Army
FY 1999 Planned Program: • 5703 Continuintegrat	anned Pr 5703	ogram: Continue software upgrades and enhancements for the refinement of the TENCAP Common Baseline to fully exploit national capabilities such as integration of communications capabilities to meet changing architectures and implementation of software appliqué to provide the operational	of the TENCAP Common Baseline to fully exploit nat tectures and implementation of software applique to pr	tional capabilities such as rovide the operational
• •	10405 3423	integration of Global Broadcast System (GBS) and the Joint Tactical Terminal (JTT) into the TENCAP systems. Continue engineering development of TES. Continue support to TENCAP program management and administrative activities [e.g. FFRDC (Aerospace), ARL support ASPO support	lition to staying current with national and theater capal all Terminal (JTT) into the TENCAP systems. rative activities [e.g. FFRDC (Aerospace), ARL sunno	bilities, will include
Total	19531	Topographic Engineering Center (TEC) and Contractor SETA support]	port].	
Project D909		Page 2 of 5 Pages		Exhibit R-2 (PE 0604766A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUST	IFICAT	ION SH	EET (R	-2 Exhit)it)		DATE Feb	February 1997	76
вирбет АСТИЛТҮ 5 - Engineering and Manufacturing Developm	Developme	ent	PE NUN 0604 Cap;	PE NUMBER AND TITLE 0604766A Tacti Capabilities (TE Manufacturing I	π∟E actical Eు (TENCAF ng Develd	PENUMBER AND TITLE 0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering & Manufacturing Development (TIARA)	n of Nati eering & IIARA)	onal	g O	PROJECT D909
B. <u>Project Change Summary</u> FY 1997 President's Budget Appropriated Value		EY 1996 23861 24101 -835	E	7 1997 15758 15235	FY 1998 20631	<u>FY 1999</u> 21235	5			
Adjustments to Appropriated Value FY 1998 BES/Pres Bud Request		23266		15235	19113	19531	_			
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total Cost
RDTE, A Budget Activity 4 PE 0603766A Project D907	26796	25354	20920	23714	24751	29020	30920	31095	Cont	Cont
TENCAP-Adv Dev RDTE, D Budget Activity 7 PE 0305154D DARP PE 0305208D DARP	41526	50287	0 30433	0 28175	0 22214	0 24108	0 23583	0 23179	Cont	Cont
Other Procurement Army, OPA-2 BZ7315 TENCAP	4473	1756	1679	1728	4598	13703	14779	16822	Cont	Cont
Procurement, Defense Wide PE 0305154D DARP PE 0305208D DARP	80822	89945	0 94070	0 81600	0 80576	0 71867	0 73926	0 75239		
D. Schedule Profile	FY 1996 2 3	4	F. 2	FY 1997 2 3	4	FY 1998 2 3	18 3 4		FY 1999 2 3	4
Complete Development and Field five Additional MITTs Complete Retrofit and Refield ETUTs Complete and Field DAMA Appliqué into	*X *X				×					
SUCCESS Radios Initiate Engineering Development of TES Install GSD into FAST Systems Complete AEPDS		* *	×							
Project D909			Page 3 of 5 Pages 878	5 Pages			Exhib	Exhibit R-2 (PE 0604766A))604766A)	Item 91



RDT&E BUDGE	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (F	₹-2 Exh	ibit)		DA	DATE Fe	February 1997	1997	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	ring Development	PE NUMBER AND TITLE 0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering & Manufacturing Development (TIARA)	TITLE Factical (TENCA	Exploit: \P) - En	ation o gineer nt (TIA)	f Natio ing & RA)	1		РРОЈЕСТ D909	F.
D. Schedule Profile	FY 1996	FY 1997	-	FΥ	FY 1998	,	-	FY 1999	-	
Initiate integration of GBS into AEPDS/TES Initiate integration of JTT into AEPDS/TES Complete integration of GBS into AEPDS/TES	n		•	≀ ×	,	•	· ×	, ,		
* Milestone completed										
Project D909	Page	Page 4 of 5 Pages				zhibit R	-2 (PE 0	Exhibit R-2 (PE 0604766A)	3	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	CT CO	ST BREAKI	DOWN (R-3) DATE	TE February 1997	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	M C 06	PE NUMBER AND TITLE 0604766A Tacti Capabilities (TE Manufacturing I	PE NUMBER AND TITLE 0604766A Tactical Exploitation of Nati Capabilities (TENCAP) - Engineering & Manufacturing Development (TIARA)	PE NUMBER AND TITLE 0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering & Manufacturing Development (TIARA)	PROJECT	ют 19
A. Project Cost Breakdown MITT ETUT TES Common Baseline (*1) FFRDC System Engineering (Contractor) SBIR/STTR Total	EY 1996 900 2962 1094 12102 1767 4441	EX 1997 0 2197 5106 4608 1220 1738 366 15235	EY 1998 8585 6965 1274 2289	FY 1999 10405 5703 1297 2126 19531		

^(*1) TENCAP Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple TENCAP systems [including MIES and ETRAC that are funded under the DARP (PE 0305154D)]

B. Budget Acquisition History and Planning Information: Not Applicable

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Project D909

Exhibit R-3 (PE 0604766A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION SI	HEET (F	१-2 Exhi	bit)		DATE Fe	February 1997	397
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developm	lent	PE N	PE NUMBER AND TITLE 0604768A Brilli	TITLE Brilliant A	\nti-Arm	or (BAT)	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition	tion	
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	190472	161816	202302	129466	146633	126860	65653	22287	0	1797674
D641 BAT	101439	67186	46077	2548	4075	0	0	0	0	948801
D687 BAT P3I	35214	18819	64556	70774	77488	61948	10727	5172	0	359652
D688 ATACMS BLK II	53535	75806	91669	44777	13233	12076	0	0	0	300851
D686 ATACMS BLK IIA	0	0	0	11094	47983	52836	54926	17115	0	183954
D2NT BAT Operational Test	284	5	0	273	3854	0	0	0	0	4416

armored targets and other targets of high value. The ATACMS BLK II missile is a version of the currently fielded and combat-proven Army TACMS Block I missile and is forces and long range weapons at ranges in excess of 100 kilometers before they can influence the maneuver battle. In the past, the only options have been to engage these designed to carry 13 BAT or BAT P31 submunitions. The ATACMS BLK IIA missile is an extended range version of the ATACMS BLK II missile and will carry 6 BAT submunitions are carried deep into enemy territory by the two Army TACMS variants, then dispensed over a large target array to selectively attack and destroy individual includes the BAT submunition, a pre-planned product improvement (P31) BAT submunition, the Army Tactical Missile System Block II (ATACMS BLK II) missile, and human interaction. It is an unpowered, aerodynamically stable vehicle, approximately 36 inches long, 5.5 inches in diameter and weighs 44 pounds. BAT and BAT P3I the ATACMS BLK IIA missile. BAT is a dual-sensor (acoustic and infrared) submunition that autonomously seeks out and destroys moving armored vehicles without targets. The BAT P3I program will improve the sensor and warhead subassemblies to increase lethality and to enable the BAT submunition to attack cold, stationary, Mission Description and Budget Item Justification: The BAT system supports the Army's deep fires doctrine that calls for the destruction and disruption of threat reduces this risk through its autonomous acquisition and terminal guidance capabilities to attack well defended armored forces behind enemy lines. The BAT system targets with attack helicopters or fixed wing aircraft. While effective, these options place critical resources and their air crews at risk. The BAT system significantly P3I submunitions out to ranges in excess of 200 kilometers. The projects in this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604768A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (F	۲-2 Exhi	lbit)		DATE Fe l	February 1997	260
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Jevelopm	ent	PE N 0 6(PE NUMBER AND TITLE 0604768A Brilli	πιτιε 3rilliant A	Anti-Armo	or (BAT)	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition		РВОЈЕСТ D641
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D641 BAT	101439	67186	46077	2548	4075	0	0	0	0	948801

A. Mission Description and Budget Item Justification: Project D641-BAT: The BAT submunition is an unpowered, aerodynamically stable vehicle approximately 36 over numerous high-payoff targets to selectively attack and destroy individual targets. By utilizing acoustic technology, BAT has the advantage of a large footprint which armored, mobile targets. BAT submunitions are carried deep into enemy territory by a variant of the Army Tactical Missile System (ATACMS Block II), then dispensed inches long, 5.5 inches in diameter, and weighs 44 pounds. The BAT is an acoustic and infrared terminally guided submunition that searches for, tracks, and destroys allows it to compensate for target location errors. Being a certified round, the BAT submunition has a low sustainment cost.

Acquisition Strategy: The BAT system is a sole source EMD program.

FY 1996 Accomplishments:

- 73550 Conducted EMD Program
- 19089 Conducted Carrier Integration Activities and other studies
- Conducted Test Range and Target Operation, Maintenance and Improvements 8800

Total 101439

FY 1997 Planned Program:

- 53329 Conduct EMD Program
- 5458 Conduct Carrier Integration Activities and other studies
- Conduct Test Range and Target Operations, Maintenance and Improvements 0089
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 1599

Fotal 67186

FY 1998 Planned Program:

- Procure Operational and Live Fire Test Hardware and Support [90 Low Rate Initial Production (LRIP) units] 25432
 - 14910 Support Carrier Flight Testing and Other Integration Activities
- 5535 Conduct Test Range and Target Operation, Maintenance and Improvement
 - 200 Studies, development, and validation of future improvement programs

otal 4607

Project D641

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Exhibit R-2 (PE 0604768A)

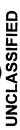
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RDT&E BUDGET ITEM JUSTIFICA	TIFICATION SHEET (R-2 Exhibit)	R-2 Exhit	oit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilli	गाराह Brilliant A	אוזונפ Brilliant Anti-Armor (BAT)	BAT) 8	Submunition		PROJECT D641
 FY 1999 Planned Program: 2313 Conduct Test Range and Target Operation, Maintenance and Improvement 115 Conduct Integration Activities 100 Deliver Operational Test and Live Fire Test Assets 20 Studies, development, and validation of future improvement programs Total 2548 	ance and Improvement ovement programs						
<u>a</u>	K 1996 FY 1997 96324 68622 99028 67186	FY 1998 24789	FY 1999 0				
Adjustments to Appropriated Value FY 1998 Pres Bud Request	101439 67186	46077	2548		·		
Change Summary: FY 1998 funding adjustment to support procurement of LRIP IOTE test articles and testing (+21288). FY 1999 funding adjustment to support delivery of articles and testing (+2548).	of LRIP IOTE test articles	and testing (+;	21288). FY 19	99 fundir	g adjustment	to support	lelivery
C. Other Program Funding Summary FY 1996 FY 1997	7 FY 1998 FY 1999	FY 2000	FY 2001 E	FY 2002	FY 2003	Complete	Cost
Missile Procurement, Army CA 6100 BAT	85208 100137	170243	200839	200109	238948	762459	1757943
D. Schedule Profile FY 1996	FY 1997 1 2 3	4	FY 1998 2 3	4	1 2	FY 1999 2 3	4
lete Design Verification Test (DVT) lete Wind Tunnel/Sled Tests lete Subsystem Qual e Contractor Developmental Test	×						
(CDT) Complete CDT Award LRIP I Contract Award LRIP II Contract Start LRIP I Deliveries	×		×		×		×
* Milestone completed.	Page 3 of 19 Pages			Exhibit	Exhibit R-2 (PE 0604768A)	04768A)	
× × 0 00 × × × × × × × × × × × × × × ×	883						Item 92

RDT&E	RDT&E PROGRAM ELEMENT/P	LEMENT/PR	ROJECT COST BREAKDOWN (R-3)	SOST B	REAKDO	OWN (R-	3)	DATE	100 4 moint	2007
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Manufacturin	g Development		PE NUMBER AND TITLE 0604768A Brilli	AND TITLE	nt Anti-Ar	отпе Brilliant Anti-Armor (ВАТ)	Submi		PROJECT D641
A. Project Cost Breakdown Contractor Engr Support Developmental Test & Evaluation Program Management Spt Program Management Personnel SBIR/STTR Total	n uation nnel		FY 1996 86665 4581 3775 6418	FY 4	FY 1997 49509 5262 4356 6460 1599 67186	FY 1998 37655 1600 2223 4599	EY 1999 120 2113 000 315 2548			
B. Budget Acquisition History and Planning Information	tory and Planning	Information								
Performing Organizations Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle Product Development Organizations	ations Contract Method/Type Award or or Funding Obligation Vehicle Date t Organizations	Performing n Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Northrop SS/CPAF/ Grumman Corp CPFF/CPIF/	AF/ 5 Jun 91 CPIF/			545192	86665	49509	37655	120	000	719141
SBIR/STTR In-House Support Support and Management Organizations	OCT Organizations			57563	6418	1599 6460	4599	315	000	1599 75355
SETA & Program SS/CPFF Mgmt Spt	FF NOV			53057	1934	2594	1165	000	000	58750
Misc. OGA PO Test and Evaluation Organizations	OCT izations			42930	1841	1762	1058	000	000	47591
Other Test PO OCT OCT OCT OCT Agostone Furnished Property: Not applicable.	OCI OCT perty: Not applica	ble.		12881	2/36 1845	2458 2804	1000	1908	3600 475	27183 19182
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	nt			602755 95987 28734 727476	93083 3775 4581 101439	57568 4356 5262 67186	42254 2223 1600 46077	435 2113 2548	4075	796095 106341 46365 948801
Project D641			Page	Page 4 of 19 Pages	Si		Exhit	Exhibit R-3 (PE 0604768A))604768A)	
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RDT&E BUDGET ITEM JUS	FEM JUS	STIFICA	TION S	HEET (F	STIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Jevelopn	ıent	PE N 0 0 (PE NUMBER AND TITLE 0604768A Brilli	नाम्पट 3rilliant A	nti-Armo	or (BAT)	e NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition		РКОЈЕСТ D687
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D687 BAT P3I	35214	18819	64556	70774	77488	61948	10727	5172	0	359652

certified round, the BAT P3I submunition has a low sustainment cost. This program will incorporate new seeker, warhead, and microprocessor technologies into the current vehicles, cold stationary armored combat vehicles, Surface-to-Surface Missile (SSM) Transporter Erector Launchers (TELs), and Heavy Multiple Rocket Launchers (MRL). BAT configuration while maintaining the current BAT form, fit and maximum commonality of BAT components. This program includes studies/demonstrations pertaining configurations. The BAT P3I is a multi-sensored, terminally guided submunition that searches for, tracks, and destroys specific targets including mobile armored combat BAT P3I submunitions are carried deep into enemy territory by variants of the Army Tactical Missile System (ATACMS), then dispensed over numerous high-payoff targets to selectively attack and destroy individual targets. BAT P3I is intended to increase submunition lethality and expand the target arrays to be attacked. Being a A. Mission Description and Budget Item Justification: Project D687-BAT P31: The BAT P31 submunition maintains the BAT length, diameter, and weight to technology advancements, alternate carriers, target recognition, and acoustic/infrared/millimeter wave characterization of expanded target sets.

Acquisition Strategy: The BAT P3I system is a sole source Program Definition and Risk Reduction (PDRR) program with competitive seeker subcontractors.

FY 1996 Accomplishments:

30260 Conducted P31 PDRR program
 3958 Hardware-in-the-Loop (long lead and design)
 996 Test Range/Warhead Activities

FY 1997 Planned Program:

- 16012 Conduct P3I PDRR program
- Receipt and Assembly of Major Components of the Hardware-in-the-Loop Facility
 - 915 Develop Warhead Lethality Models
 - 609 Conduct Captive Flight Test (CFT)
- 100 Studies, Development and Validation of Future Improvement Programs
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs

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Project D687

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (F	R-2 Exhib	it)	DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilli	नामाट Brilliant An	ti-Armor (ЭТІТІЕ Brilliant Anti-Armor (BAT) Submunition	РРОЈЕСТ D687
 FY 1998 Planned Program: 53270 Continue System Development and Complete P3I PDRR Program 1226 Continue Simulation and Testing Program 2300 Conduct CFTs 4613 Integrate and Test Seekers in the Hardware-in-the-Loop Facility 2947 Conduct Warhead Testing 200 Studies, development, and validation of future improvement programs Total 64556 	. Program Facility ient programs			·	
FY 1999 Planned Program:	ent programs				
B. Project Change Summary FY 1997 President's Budget Appropriated Value 37136 Adjustments to Appropriated Value	FY 1997 34221 18819	FY 1998 64804	FY 1999 64137		TO A PART OF THE
	18819	64556	70774		
Change Summary Explanation: FY 1999 funding increase to support restructure of BAT P3I EMD program and additional funding required to maintain LRIP schedule (+6637).	re of BAT P31 EMD	orogram and ad	ditional fundir	ng required to maintain LRIP	chedule
 C. Other Frogram Funding Summary: There are no other related KD 1 & E of other appropriation efforts. D. Schedule Profile 1 2 3 4 1 2 3 4 1 2 3 4 	r outer appropriation FY 1997 1 2 3	e110ns. 4 1	FY 1998 2 3	FY 1999 4 1 2 3	4
Captive Flight Tests (CFT) Target Signature Collection Warhead Testing X* X*	× *X	×	× × ×	×	····
Project D687	Page 6 of 19 Pages			Exhibit R-2 (PE 0604768A)	V) Item 92
	880				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition	PROJECT Submunition D687
D. Schedule Profile 1 2 3 4	FY 1997 FY 1998	FY 1999
)		n ×
*Milestone completed.		
Project D687	Page 7 of 19 Pages Exhib	Exhibit R-2 (PE 0604768A)

RD	r&E PROC	SRAM EL	RDT&E PROGRAM ELEMENT/PROJECT	DECT (SOST BI	REAKDO	COST BREAKDOWN (R-3)	3)	DATE F (February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	g and Manu	ıfacturing	Development		PE NUMBER AND TITLE 0604768A Brilli	AND TITLE A Brillia	nt Anti-Ar	रामाट Brilliant Anti-Armor (BAT) Submunition	Submun	ition	Р R ОЈЕСТ D687
A. Project Cost Breakdown Contract Engineering Support Developmental Test & Evaluation Program Management Support Program Management Personnel SBIR/STTR	eakdown g Support & Evaluation ant Support			EY 1996 26759 697 1306 6452 35214	FY	FY 1997 15448 530 606 1775 460 18819	EY 1998 50849 3150 3227 7330 64556	EY 1999 60804 3804 1329 4837			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Activity	tion History and izations Contract Method/Type or Funding	d Planning Ini Award or Obligation Date	formation Performing Activity FAC	Project Office RAC	Total Prior to FY 1996	FV 1996	FV 1997	FV 1998	F.V. 1999	Budget to	Total
Product Development Organizations Northrop	ent Organizatio SS-CPIF	ons DEC			0666	26759	15448	50849	60804	111549	275399
Grumman Corp SBIR/STTR In-House Support	PO	OCT			2260	6452	460	7330	4837	11988	460 34642
Support and Management Organizations SETA & Prog SS-CPFF NOV	gement Organi SS-CPFF	zations NOV			710	491	251	725	854	2521	5552
Misc ogA	PO	OCT			1039	815	355	2502	475	950	6136
Activities Test and Evaluation Organizations Range Support PO Other Test PO Activities	n Organization PO PO	s OCT OCT			25 930	0	530	700 2450	2200	8260 20067	11185
Government Furnished Property: Not applicable.	shed Property:	Not applicabl	ú								
Project D687				Page	Page 8 of 19 Pages 888	es		EX.	Exhibit R-3 (PE 0604768A)	0604768A)	Item 92

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	r cost B	REAKDO	WN (R-	3	DATE Fe	February 1997	160
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilli	AND TITLE	nt Anti-Ar	ЭТІТІЕ Brilliant Anti-Armor (BAT) Submunition	Submun (PROJECT D687
	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	12250 1749 955 14954	33211 1306 697 35214	17683 606 530 18819	58179 3227 3150 64556	65641 1329 3804 70774	123537 3471 28327 155335	310501 11688 37463 359652
Project D687	Page 9 of 19 Pages	es		Exh	Exhibit R-3 (PE 0604768A)	0604768A)	
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RDT&E BUDGET ITEM JUST	TEM JUS	TIFICA	TION SI	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE FeI	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developm	ent	PE N 0 6(PE NUMBER AND TITLE 0604768A Brilli	E NUMBER AND TITLE D604768A Brilliant Anti-Armor (BAT) Submunition	Inti-Armo	or (BAT)	Submuni		PROJECT D688
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D688 ATACMS BLK II	53535	75806	91669	44777	13233	12076	0	0	0	300851

A. Mission Description and Budget Item Justification: Project D688-Army Tactical Missiles System Block II: The Army Tactical Missile System Block II (ATACMS BLK II) will be a ground launched, solid propellant, inertially guided Global Positioning System (GPS) aided missile system with 13 BATs or P31 BATs as its payload. The submunition is incorporated into the ATACMS BLK II, these targets will include cold stationary armored combat vehicles, mobile armored combat vehicles, heavy multiple technology advancements, payload variants, propulsion, guidance and control, and fire control improvements. This includes studies addressing Block II integration with rocket launchers and missile transporter/launchers. ATACMS BLK II will carry and dispense BAT and BAT P3I submunitions deep in enemy territory where these ATACMS BLK II will be launched from the M270 launcher. Further, these funds will allow for future improvement program studies/demonstrations pertaining to submunitions will automatically track and destroy numerous high-payoff targets. GPS technology will increase accuracy in flight, mitigating target location errors. mission of the ATACMS BLK II is to delay, disrupt, neutralize, or destroy armored combat vehicles and other postulated high-payoff targets. Once the BAT P31 other platforms.

Acquisition Strategy: The Army Tactical Missile System Block II is a sole source performance specification requirement program.

FY 1996 Accomplishments:

- EMD including initiation of Block II/BAT Integration Activities.
- Initiated Range Planning and Activities to Accommodate Block II Flight Tests 300
 - Accelerated planned activities for an early Development Flight Test 5581

FY 1997 Planned Program:

- Conduct EMD Program to include Preliminary Design Review(PDR), Critical Design Review(CDR) and Block II/BAT Integration Activities
 - Conduct Sled Tests (OGA) 400
- Prepare for and begin Production Proveout Test (PPT) Flight Program (OGA) 570
 - Begin Command and Control Software Design, Development and Test 1374
- Studies, development, and validation of future improvement programs
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs

Project D688

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET (R	-2 Exhibit		DATE Fe	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilli	ITLE rilliant Anti	-Armor (BA	אוזונב Brilliant Anti-Armor (BAT) Submunition		РРОЈЕСТ D688
 FY 1998 Planned Program: 14000 Begin Pilot Production Line and Begin IOT&E Activities 69594 Continue EMD Including Submunition Integration 5010 Complete Production Proveout Test (PPT) Flights /Begin Preproduction Qualification Test (PQT) Flights 350 Conduct "Interim" Launcher Integration Tests 2465 Continue Command and Control Software Design, Development and Test 250 Studies, development, and validation of future improvement programs Total 91669 	tties gin Preproduction Qualifi velopment and Test rement programs	cation Test (PQ	T) Flights			
FY 1999 Planned Program: 36412 Continue EMD and Subsystem Qualification 3189 Complete PQT and conduct DT/OT Flight Tests 1075 Conduct M270A1 Integration Tests 1451 Conduct C4I System Integration Tests 1300 Continue Command and Control Software Design, Development and T100 Prepare for Ground and Flight Operational Test 250 Studies, development, and validation of future improvement programs Total 44777	on Tests Design, Development and Test Test .ure improvement programs					
B. Project Change Summary FY 1997 President's Budget 62095 Appropriated Value 63840	5 FY 1997 77559 10 75806	FY 1998 76779	FY 1999 36319			
	.5 75806	91669	44777			
Change Summary Explanation: FY 1996 funding adjustment due to undistributed Congressional reductions and rescissions (-3305) and reprogramming to BAT Programmery (Project D641) (-7000) which was a higher priority requirement. FY 1998/1999 funding adjustments to support BAT P31 integration activities with the Block II missile (+14890/+8458).	to undistributed Congressional reductions and rescissions (-3305) and reprogramming to BAT Program s a higher priority requirement. FY 1998/1999 funding adjustments to support BAT P31 integration a (+14890/+8458).	tions and rescis 998/1999 fundi	sions (-3305) ar ing adjustments	nd reprogrammin to support BAT	ig to BAT Pr P3I integrat	ogram ion
C. Other Program Funding Summary Missile Procurement, Army CA 6105 ATACMS BLK II	FY 1998 FY 1999 60781	FY 2000 FY 80741 1	FY 2001 FY 2002 109907 84471	102 FY 2003 171 128281	To <u>Complete</u> 509138	Total <u>Cost</u> 973319
Project D688	Page 11 of 19 Pages		Û	Exhibit R-2 (PE 0604768A)	604768A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET (R-2 Exhi	bit)		DATE February 1997	, 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilli	D TITLE Brilliant A	nti-Armo	r (BAT)	ס דודוב Brilliant Anti-Armor (BAT) Submunition	PROJECT D688
D. Schedule Profile	FY 1997		FY 1998		FY 1999	<u>0</u> 6
* * * * * * * * * * * * * * * * * * *	· * *	× ×	1		×× ×	
Project D688	Page 12 of 19 Pages			Ω Ψ W	Exhibit R-2 (PE 0604768A)	Ą
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RDT&E PR	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT (SOST B	REAKD(OWN (R-	3)	DATE F	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Ma	DGET ACTIVITY - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604768A Brilli	AND TITLE	nt Anti-Ar	ס דודוב Brilliant Anti-Armor (BAT) Submunition	Submun (РRОЈЕСТ D688
A. Project Cost Breakdown Contractor Engr Support Development Test & Evaluation Program Management Spt Program Management Personnel SBIR/STTR Total	n el	EY 1996 47112 712 1678 4033		FY 1997 56000 5640 4944 7370 1852 75806	FY 1998 63226 13969 5984 8490 91669	EX 1999 2441 9109 4454 6773			
B. Budget Acquisition History and Planning Information	y and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle	Type Award or Performing ig Obligation Activity Date EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
LMV SS/CPIF In-House Support PO SBIR/STTR	zations JULY 95 OCT		7411 1419	47112 4033	56000 7370 1852	63226 8490	24441 6773	2664	200854 30284 1852
Support and Management Organizations SETA & Program SS/CPFF OCT Momt Sat	ganizations OCT		858	1166	1133	1777	1564	1944	8442
Misc. OGA PO Activities	OCT			512	3811	4207	2890	9210	20630
Test and Evaluation Organizations Range Support PO Other Test PO Activities	ations OCT OCT		29	450	5191 449	12309 1660	8318 791	6998 2294	33266 5523
Government Furnished Property: Not applicable. Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	erty: Not applicable.		8830 858 67 9755	51145 1678 712 53535	65222 4944 5640 75806	71716 5984 13969 91669	31214 4454 9109 44777	4863 11154 9292 25309	232990 29072 38789 300851
Project D688		Page	Page 13 of 19 Pages	ges		Exh	Exhibit R-3 (PE 0604768A)	0604768A)	
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RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION S	HEET (F	FIFICATION SHEET (R-2 Exhibit)	bit)		DATE FeI	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Jevelopm	ent	PE N	PE NUMBER AND TITLE 0604768A Brilli	E NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition	\nti-Armo	or (BAT)	Submuni		РRОЈЕСТ D686
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D686 ATACMS BLK IIA	0	0	0	11094	47983	52836	54926	17115	0	183954

the ATACMS Block IIA will be to delay, disrupt, or destroy the Block II target sets plus cold stationary tanks and armored combat vehicles as well as moving and stationary launched, solid propellant, inertially guided Global Positioning System(GPS) aided missile system with six BAT P3I submunitions as its payload. The ATACMS Block IIA A. Mission Description and Budget Item Justification: Project D686-Army TACMS Block IIA: The Army TACMS Block IIA (ATACMS Block IIA) will be a ground Block IIA payload only houses six submunitions rather than 13, as in the Block II, it is capable of achieving extended ranges comparable to the Block IA. The mission of surface-to-surface missile (SSM) transporter erector launchers (TELs) at extended ranges. The Block IIA missile will dispense 6 BAT P3I submunitions at ranges beyond will be launched from the M270 launcher in response to the same Command and Control (C2) nodes applicable to the Block I, Block IA, and Block II missiles. Since the the Block II system.

Acquisition Strategy: The Army Tactical Missile System Block IIA is a sole source performance specification requirement program.

FY 1996 Accomplishments: Project not funded in FY 1996

FY 1997 Planned Program: Project not funded in FY 1997

FY 1998 Planned Program: Project not funded in FY 1998

FY 1999 Planned Program:

- 300 Department of the Army In-Process Review (DA IPR)
- 8937 Initiate and Conduct EMD Program; Conduct Submunition Integration Activities
 - 1857 Conduct Test Range and Target Operation, Maintenance and Improvement

Total 11094

B. Project Change Summary

FY 1997 President's Budget

35990

FY 1999

FY 1998 11133

FY 1997

FY 1996

11094

0

Appropriated Value

Adjustments to Appropriated Value

Adjustrients to Appropriated Value FY 1998 Pres Bud Request Change Summary Explanation: FY 1998/1999 funding adjustments to support Block IIA delay of one year to pay for higher Army priorities (-11133/-24896).

Project D686

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUSTIFICATI	ON SHEET (R	-2 Exhib	it)	DATE	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Development	PE NUMBER AND TITLE 0604768A Brilli	пте Srilliant Ar	DITILE Brilliant Anti-Armor (BAT) Submunition	T) Submu		PROJECT D686
C. Other Program Funding Summary Missile Procurement, Army CA 6110 ATACMS BLK IIA	FY 1996 FY 1997	FY 1998 FY 1999	FY 2000	FY 2001 FY 2002 9868	2002 FY 2003 9868 62542	To 2 Complete 2 459320	Total <u>Cost</u> 531730
D. Schedule Profile 1 DA IPR EMD Contract	FY 1996 2 3 4	FY 1997 1 2 3	4	FY 1998 2 3	4	FY 1999 2 3 X X	4
Project D686	Pa	Page 15 of 19 Pages		Ш	Exhibit R-2 (PE 0604768A)	E 0604768A)	
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RDT&E PROGRAM ELEMENT/PROJ	JECT C	OST BR	EAKDC	PROJECT COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Д.	PE NUMBER AND TITLE 0604768A Brilli	ND TITLE Brillian	ıt Anti-Ar	этте Brilliant Anti-Armor (BAT) Submunition	Submun (РРОЈЕСТ D686
A. Project Cost Breakdown Contractor Engr Support Development Test & Evaluation Program Management Spt Program Management Personnel Total	FY 1996	FY 1997	<u> 76</u> 6	FY 1998	FY 1999 7259 1857 900 1078 11094			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing P Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations	Project Office <u>EAC</u> E	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to <u>Complete</u>	Total <u>Program</u>
LMV SS/CPFF In-House Support PO OCT						7259 1078	118028	125287 12940
SETA & Program SS/CPFF OCT Mgmt Spt						006	5624	6524
Test and Evaluation Organizations Range Support PO OCT Other Test PO OCT Activities						654 1203	25783 11563	26437
Government Furnished Property: Not applicable.								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project						8337 900 1857 11094	129890 5624 37346 172860	138227 6524 39203 183954
Project D686	Page 1	Page 16 of 19 Pages	S		Exh	Exhibit R-3 (PE 0604768A)	0604768A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	STIFICA	TION S	HEET (F	र-2 Exhi	bit)		DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developn	nent	PE N	PE NUMBER AND TITLE 0604768A Brilli	ס דודוב Brilliant Anti-Armor (BAT) Submunition	Inti-Armo	or (BAT)	Submun		PROJECT D2NT
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D2NT BAT Operational Test	284	5	0	273	3854	0	0	0	0	4416
A. Mission Description and Budget Item Justification: Projand evaluation of the BAT submunition by the Operational Test with a dedicated Initial Operational Test and Evaluation in FY conditions, as similar as possible, to those encountered in actual an independent test and evaluation of both the effectiveness and	ication: Projectional Test perational Test uation in FY 1 tered in actual	iect D2NT-C t and Evalua 1998 in supp combat with suitability o	ect D2NT-OPTEC: Pro and Evaluation Commar 998 in support of a Low combat with typical user suitability of the system.	ect D2NT-OPTEC: Project D2NT finances the direct costs of planning and conducting operational testing and Evaluation Command (OPTEC). The BAT submunition is an Acquisition Category (ACAT) I system 1998 in support of a Low Rate Initial Production (LRIP) decision. Operational testing is conducted under combat with typical user troops trained to employ the system. OPTEC provides the Army leadership with suitability of the system.	finances the The BAT: Production (direct costs c submunition LRIP) decisi y the system	of planning a is an Acquision. Operati	and conducti sition Catego ional testing rovides the A	ng operation ory (ACAT) is conducted Army leaders	al testing I system under hip with
Acquisition Strategy: Not applicable.										
FY 1996 Accomplishments: • 284 IOTE planning and preparation Total 284	tion								·	
FY 1997 Planned Program: • 5 IOTE planning and preparation Total 5	ion									
FY 1998 Planned Program: Project not funded in FY 1998	in FY 1998									
FY 1999 Planned Program: • 273 IOTE planning and preparation Total 273	ion									
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 291 299		FY 1997 5 5	FY 1998 223	FY 1999 1079	9 <u>9</u> 79			
FY 1998 Pres Bud Request		284) 4	ς.	0	7,	273			
Change Summary Explanation: FY 1998/1999 funding adjustments to support ATACMS Block II/BAT IOTE schedule (-223/-806)	ding adjustme	ents to suppo	IT ATACMS	Block II/B	AT IOTE sch	edule (-223/	-806).			
Project D2NT			Page 17 of 19 Pages	19 Pages			Exhibi	Exhibit R-2 (PE 0604768A))604768A)	
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RDT&E BUDGET ITEM JUSTIFICAT	IIFICATION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition	PROJECT Ibmunition D2NT
C. Other Program Funding Summary: There are no other related RDT&E or other appropriation efforts.	or other appropriation efforts.	
D. Schedule Profile 1 2 3 4	FY 1997 FY 1998	FY 1999
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*Milestone completed		
Project D2NT	Page 18 of 19 Pages Exhibit F	Exhibit R-2 (PE 0604768A)
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RDT&E PROGRAM ELEMENT/PRO	JECT C	OST BF	REAKDO	PROJECT COST BREAKDOWN (R-3)		DATE F6	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604768A Brilli	AND TITLE A Brilliai	nt Anti-Arı	ਮਸਮ Brilliant Anti-Armor (BAT) Submunition	Submun	ition	PROJECT D2NT
 A. Project Cost Breakdown Operational Test and Evaluation Total 	FY 1996 284 284	FY 1997 5	9 <u>97</u> 5 5	FY 1998 0	FY 1999 273 273			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Bevelopment Organizations: None Support and Management Organizations: None	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Test and Evaluation Organizations Other Test Activities			284	S	0	273	3854	4416
Government Furnished Property: Not applicable.								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			284 284	s, s	0 0	273 273	3854 3854	4416
Project D2NT	Page	Page 19 of 19 Pages	Si		Exhi	Exhibit R-3 (PE 0604768A)	0604768A)	
		668						Item 92

RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	R-2 Exhi	bit)		DATE FeI	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE N 060 Sys	PE NUMBER AND TITLE 0604770A Joint System	тпс Joint Surv	PE NUMBER AND TITLE 0604770A Joint Surveillance/Target Attack Radar System	/Target A	ttack Ra	dar	
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	15302	9624	6940	0299	4121	13490	19188	19205	19205 Continuing Continuing	Continuing
D202 Army Joint STARS (TIARA)	13613	9624	6940	9299	4121	13490	19188	19205	19205 Continuing Continuing	Continuing

5040

0

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0

0

0

0

0

1689

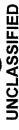
D2CT JSTARS Operational Test (TIARA)

area surveillance and target attack radar system capable of continuous coverage out to a depth in excess of 100km beyond their Forward Line of Troops. Commanders must develop a radar, datalink, ground station, and airframe that will provide the capability to locate, track and classify tracked and wheeled vehicles beyond ground line-of-sight have the capability to detect, locate, classify and track moving and stationary targets for situation assessment to avoid surprise and attack targets out to the range of existing and developing weapons. The Joint Surveillance and Target Attack Radar System (JSTARS) provides battle management and targeting of enemy units at critical times and Mission Description and Budget Item Justification: This is a Tactical Intelligence and Related Activities (TIARA) program. US Forces have an urgent need for a wideenhancing Pre-Planned Product Improvements (P31). Also included in this PE is project D2CT with FY 96 funding for the Multi-Service Operational Test and Evaluation (MOTE). The projects in this program element support development efforts in the Engineering and Manufacturing Development phases of the Acquisition Strategy and during the day, night and under most weather conditions. Radar data is distributed to ground station modules via a secure surveillance and control data link. The Army places so commanders can employ their organic forces and firepower in support of deep, close and rear operations. The joint Army/Air Force program objective is to developed the ground components of the JSTARS under this PE, project D202. In remaining years, the Army will continue to develop, and validate performance therefore are correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604770A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (F	≀-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Jevelopm	ent	PE N 060 SV3	PE NUMBER AND TITLE 0604770A Joint System	TITLE Joint Sur	veillance	E NUMBER AND TITLE 3604770A Joint Surveillance/Target Attack Radar System	ttack Ra		PROJECT D202
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D202 Army Joint STARS (TIARA)	13613	9624	6940	5670	4121	13490	19188	19205	Continuing	19205 Continuing Continuing

A. Mission Description and Justification: The Army will develop the ground components of the JSTARS under this PE/Project. The Ground Station Module (GSM) is platforms. The Block I Medium GSM (MGSM) is housed in a standard S280 shelter and mounted on a 5 Ton Truck. The rapidly deployable Block I Light GSM (LGSM) is (HGSM) prototype was also assembled. This variant integrated the GSM prime mission equipment into a Command and Control Vehicle (C2V) (a Bradley variant). Also being developed in a Block approach. Block I Ground Station Modules (GSM) utilize the same prime mission equipment and will be developed and deployed on different housed in a Standard Integrated Command Post Shelter (SICPS) and mounted on a High Mobility Multi-Purpose Wheeled Vehicle (HMMWV). A Block I Heavy GSM included in this project is the development of the Block II GSM now called the Common Ground Station (CGS). The CGS will integrate signal, imagery, and other intelligence processing into a single ground station, resulting in enhanced battle management as well as significant cost savings. These enhancements are being implemented in a phased approach of Pre-Planned Product Improvements (P3I) initiatives and provide significant expansion of the system performance parameters. Significant enhancements include: integration of Secondary Imagery Dissemination, extended range (SATCOM relay) capability, full on the move and manportable operations as well as integration/interface with other service/allied sensor systems.

Acquisition Strategy: In December 1995, the JSTARS Ground Station Program awarded an eight year [basic plus seven one year options] production contract to acquire the balance of ground stations required to meet Army needs. The first two years of the contract are Low Rate Initial Production (LRIP) with the first deliveries participating in a September 1997 Operational Test. This test will support the Milestone III decision scheduled for May 1998. The contract also includes provisions for the design, development and test of various P31s. Following P31 prove out, the modifications are folded into the production contract via fixed price contract revisions.

FY 1996 Accomplishments:

- 1834 Completed LGSM EMD Program
- 10559 Initiated Phase I CGS Design/System Enhancements
- 1220 Conducted CGS Phase I Critical Design Review (CDR)
- otal 13613

FY 1997 Planned Program:

- 5710 Complete Secondary Imagery Dissemination Integration
 - 2106 Initiate Sensor Integration (P3I)
 - 1590 IOT&E Support
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)

al 9624

Project D202

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Exhibit R-2 (PE 0604770A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	TFICAT	IS NOI	IEET (R	-2 Exhik	oit)		DATE Fet	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	/elopme	nt	PE NU 060	PE NUMBER AND TITLE 0604770A Joint System	ा⊤∟E oint Surv	eillance/	Target /	PE NUMBER AND TITLE 0604770A Joint Surveillance/Target Attack Radar System		PROJECT D202
FY 1998 Planned Program:	gration (P3)	(
 FY 1999 Planned Program: 2814 Complete CGS Expanded Capability Development 2200 Provide Additional Simulators/Embedded Training Capability 656 Test CGS Expanded Performance Capabilities Total 5670 	ility Develc mbedded T e Capabiliti	pment raining Cap es	ability							
B. Project Change Summary FY 1997 Presidents Budget Appropriated Value Adjustments to Appropriated Value		EY 1996 25747 26007 -12394	FY	FY 1997 9857 9624	FY 1998 7202	FY 1999 6068	6 8			
FY 1998 Pres Bud Request		13613		9624	6940	5670	0			
C. Other Program Funding Summary BA1080 Joint STARS (TIARA) BS9724 Joint STARS Spares NATO AGS C35 NATO AGS BA 1082	FY 1996 82376 3569 9500 0	EX 1997 85321 8770 0	FY 1998 118873 6346 13500 26153	FY 1999 89180 6487 15105 32575	FY 2000 91196 6600	FY 2001 102224 6687	EY 2002 36146 7439	FY 2003 18039 4747	To Compl Cont Cont	Total Cost Cont Cont
D. Schedule Profile 1 CGS I DID Award	FY 1996 2 3	4	1 2	FY 1997 2 3	4	FY 1998 2 3	8 3 4	- 7	FY 1999 2 3	4
REMD Program se I CDR all Test	* * *		**							
Project D202			Page 3 of 9 Pages) Pages			Exhib	Exhibit R-2 (PE 0604770A)	304770A)	





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997	7
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604770A Joint Surveillance/Target Attack Radar Svstem	1	PROJECT D202
D. Schedule Profile	FY 199	FY 199	
		4	4 ×
Project D202	Page 4 of 9 Pages	Exhibit R-2 (PE 0604770A)	
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RDT&E PF	RDT&E PROGRAM ELEMENT/P	EMENT/PR	OJECT (COST BI	REAKDO	ROJECT COST BREAKDOWN (R-3)	3)	DATE F	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	lanufacturing	Development		PE NUMBER AND TITLE 0604770A Joint System	AND TITLE A Joint	Surveillan	р тітге Joint Surveillance/Target Attack Radar	Attack R		РКОЈЕСТ D202
A. Project Cost Breakdown Primary Hardware Development Software Development Integrated Logistics Support Developmental/Operational Test and Evaluation Contractor Engineering Support Government Engineering Support Program Management Support Program Management Personnel SBIR/STTR Total B. Budget Acquisition History and Planning Information	nt st and Evaluation ort el	formation	EY 1996 6059 3226 265 650 1649 435 455 874	FY	FY 1997 3904 2084 270 1590 801 193 177 387 218 9624	EY 1998 1611 1852 105 2265 625 144 170 168	EX 1999 2064 2079 95 525 455 179 136 137 5670			
Contractor or Contract Government Method/Type Performing or Funding Activity	Type Award or ng Obligation Date	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Product Development Organizations Motorola SS/CPFF (96-C-S201)	izations 7 Nov 95	10063	8339	0	1750	1848	1024	871	2746	8339
Motorola C/FP (96-C-S204)	Dec 95	34048	34048	0	8117	4275	2955	3616	14975	34048
Cubic (93-C-0166) SB/FPI SBIR/STTR	Apr 93	6439	6439	4833	946	642	0	0	0	6439
Support and Management Organizations CECOM	rganizations				435	193	. 144	179		951
lagement					1329 294	564 144	338	273 101		2504 648
Test and Evaluation Organizations Various MIPR	ations				920	1590	2265	525		5030
Project D202			Pas	Page 5 of 9 Pages	SZ		Exh	ibit R-3 (PE	Exhibit R-3 (PE 0604770A)	
										Itom 02



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RDT&E PROGRAM ELEMENT/	ELEMENT/PROJEC	PROJECT COST BREAKDOWN (R-3)	REAKDC	JWN (R-	<u>@</u>	DATE Fe	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	g Development	PE NUMBER AND TITLE 0604770A Joint System	AND TITLE	PE NUMBER AND TITLE 0604770A Joint Surveillance/Target Attack Radar System	ce/Target	Attack Ra		PROJECT D202
Government Furnished Property Contract Contract Method/Type Award or Item or Funding Obligation Description Vehicle Product Development Property Various Reqn Support and Management Property: N/A Test and Evaluation Property: N/A	n Delivery <u>Date</u>	Total Prior to FY 1996 600	FY 1996	FY 1997 140	FY 1998 105	FY 1999 105	Budget to Complete Cont	Total Program Cont
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		132137	10905 2058 650 13613	7133 901 1590 9624	4084 591 2265 6940	4592 553 525 5670	Cont Cont Cont Cont	Cont
Project D202		Page 6 of 9 Pages	SZ		Exhi	Exhibit R-3 (PE 0604770A)	0604770A)	Item 93
		202						

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA-	TION SE	HEET (R	FIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 1997	260
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE NU 060 Sys	PE NUMBER AND TITLE 0604770A Joint System	пп∟Е loint Surv	reillance	/Target A	PE NUMBER AND TITLE 0604770A Joint Surveillance/Target Attack Radar System	:	PROJECT D2CT
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D2CT JSTARS Operational Test (TIARA)	1689	0	0	0	0	0	0	0	0	5040

A. Mission Description and Justification: Project D2CT provides for the Army's costs associated with the Multi-Service Operational Test and Evaluation (MOTE). All MOTE activities were completed by 2Q96. This Joint Service Initial Operational Test and Evaluation (IOT&E) supports both the US Army and US Air Force for the Joint STARS Full Scale Production Decisions. (US Air Force in FY 96 and US Army in FY 98)

FY 1996 Accomplishments:

- Conducted MOTE
- Completed Test Analysis and Reports 789 900 1689

Total

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program: Project not funded in FY 99

B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request		FY 1996 1733 1750 -61 1689		FY 1997 0 0 0	FY 1998 0 0 0	FY 1999	<u>66</u> 0 0			
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To <u>Complete</u>	Total Cost
BA1080 Joint STARS Army TIARA Funding BS9724	80376 3569	85428 8770	118873 6346	90134 6487	92274	103439 6687	36514 7439	18154 4747	Cont	Cont

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Project D2CT

Exhibit R-2 (PE 0604770A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997	97
вирдет астімту 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604770A Joint Surveillance/Target Attack Radar System		PROJECT D2CT
D. Schedule Profile	Y 1997 FY 199	FY 199	
MOTE Pre Test Planning and Training MOTE Repare MOTE Report X* X* X*	2 3 4 1 2 3	4 1 2 3	4
*Denotes completed milestone			*
			•
			·
Project D2CT	Page 8 of 9 Pages	Exhibit R-2 (PE 0604770A)	

RDT&E PROGRAM ELEMENT/PRO.	PROJECT COST BREAKDOWN (R-3)	ST BF	EAKDC	WN (R-	3	DATE F .	February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	0 0	PE NUMBER AND TITLE 0604770A Joint System	AND TITLE A Joint S	Surveillan	PE NUMBER AND TITLE 0604770A Joint Surveillance/Target Attack Radar System	Attack R	adar	PROJECT D2CT
A. Project Cost Breakdown Operational Test and Evaluation Total	FY 1996 1689 1689	FY 1997 0	7 <u>66</u> 0 0	FY 1998 0 0	FY 1999 0			
B. Budget Acquisition History and Planning Information								
Award or Performing Obligation Activity Date EAC ss: N/A ations: N/A	Project Office I EAC F	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Test and Evaluation Organizations OPTEC MIPR Dec 94		3307	1689	0			0	4996
Government Furnished Property: Not applicable								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		3307 3307	1689					4996
Project D2CT	Page \$	Page 9 of 9 Pages	S		Exh	Exhibit R-3 (PE 0604770A)	0604770A	

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SH	HEET (R	-2 Exhi	bit)		DATE Fel	February 1997	26
вирает АстилтУ 5 - Engineerin ç	вирбет Астіуітү 5 - Engineering and Manufacturing Developm	evelopm	ent	PE NI 060 (SP	PE NUMBER AND TITLE 0604778A Posit (SPACE)	ositionir	PE NUMBER AND TITLE 0604778A Positioning Systems Development (SPACE)	ns Devel	opment		РКОЈЕСТ D168
O	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D168 NAVSTAR Glot Equipment	NAVSTAR Global Positioning System (GPS) Equipment	436	428	419	409	458	453	0	0	0	2603
A. Mission Description and Budget requiring positioning/navigational cap These alternatives include, but are not GPS. The project in this program elen correctly placed in Budget Activity 5.	A. Mission Description and Budget Item Justification: Project D168 provides for Army participation in the research and development phases of Army weapon systems requiring positioning/navigational capabilities. It provides for the engineering development of several alternatives for integration of GPS receivers into selected systems. These alternatives include, but are not limited to, Embedded/Integrated GPS, Advanced GPS Receivers (AGR), Tactical GPS Anti-Jam Technology (TGAT) and Differential GPS. The project in this program element supports research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.	tion: Projectovides for the ovides for the objectored for the effortes esearch effor	t D168 provering trated GPS, in the eng	rides for Arm g developme Advanced G ineering and	ny participat. ent of several iPS Receiver	ion in the rest alternatives s (AGR), Te ing develops	search and de s for integrati actical GPS A	velopment on of GPS r anti-Jam Te of the acquii	phases of Ar eceivers intr chnology (T	my weapon o selected sys GAT) and D	systems tems. ifferential refore
Acquisition Strateg	Acquisition Strategy: Perform studies and analyses of host vehicles to support development of alternative GPS applications.	s of host veh	icles to supp	ort developr	nent of alter	native GPS a	applications.				
FY 1996 Accomplishments:	nments: Procured and tested items in the marketplace to remain current with NDI alternatives (to include embedding) Advanced GPS receiver framework conceptualization (non-hardware work)to meet evolving user requirements. Air receiver exploration for MAGR follow-on replacement	he marketpla swork concep IAGR follow	ce to remain otualization (-on replacen	current with (non-hardwa nent	n NDI alterna tre work)to n	atives (to inc neet evolvin;	ice to remain current with NDI alternatives (to include embedding) ptualization (non-hardware work)to meet evolving user requiremer 7-on replacement	ling) ements.			
FY 1997 Planned Program:	rogram: Improve accuracy and time to fix studies for follow-on equipment requirements Test program for NDI aviation GPS receiver (MAGR follow-on/replacement) Improve survivability of GPS capability (renewed anti-jam/anti-spoof and other threats response) Small Business Innovation Research/Small Business Technology Transfer(SBIR/STTR)	fix studies for GPS receive capability (research/Small	or follow-on er (MAGR f enewed anti- Business Te	or follow-on equipment requiremen er (MAGR follow-on/replacement) enewed anti-jam/anti-spoof and oth I Business Technology Transfer(SB	requirements placement) oof and other ransfer(SBIF	t threats resp &STTR)	onse)				

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Project D168

FY 1998 Planned Program:

120 Continue improving accuracy and time to fix studies

134 Continue survivability studies

155 Explore emerging capabilities based on follow-on satellite configuration options

Total 419

428

Total

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Exhibit R-2 (PE 0604778A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATION S	HEET (R	-2 Exhit	oit)		DATE Febr	February 1997	7
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604778A Posit (SPACE)	ı⊤∟E ositionin	ртіть Positioning Systems Development	ıs Develc	opment	PR D	РКОЈЕСТ D168
 FY 1999 Planned Program: 200 Continue exploration of emerging capabilities 109 Support miniaturization studies 100 Conduct studies on interfacing GPS with other systems Total 409 	systems							
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1997 437 428	FY 1998 436	FY 1999 424	6) 4			
Adjustments to Appropriated Value FY 1998 Pres Bud Request	-16 436	428	419	409	6			
C. Other Program Funding Summary	EV 1007 EV 1008	FV 1000	EV 2000	EV 2001	EV2002	EV2002	To	Total
			6895	33332	33967	51991	40000	255295
D. Schedule Profile: Not applicable								
	Dans J. C. Dans	6.3 Dames			# 4 1	E., ki iki ti 0 0 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7700	
righter Dio	1 uge 2 of	0				N-2 (FE 000	(NO) 11	Item 94

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RDT&E PROGRAM ELEMENT/PRO	PROJECT COST BREAKDOWN (R-3)	KDOWN (R-3	DATE	February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604778A Posit (SPACE)	гтге 'ositioning Syst	PE NUMBER AND TITLE 0604778A Positioning Systems Development (SPACE)	PROJECT D168
A. Project Cost Breakdown Developmental Test and Evaluation Government Engineering Support Contractor Engineering Support SBIR/STTR Total	FY 1996 FY 1997 0 150 273 156 163 111 436 428	FY 1998 134 165 120 419	FY 1999 109 200 100 409	
B. Budget Acquisition History and Planning Information: Not applicable	able			
Project D168	Page 3 of 3 Pages		Exhibit R-3 (PE 0604778A)	.0604778A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA"	TION SI	HEET (R	≀-2 Exhil	bit)		DATE FeI	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Jevelopm	ent	PE NI 060	PE NUMBER AND TITLE 0604780A Com	PE NUMBER AND TITLE 0604780A Combined Arms Tactical Trainer (CATT)	d Arms T	actical T	rainer (C	ATT)	
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	56282	26110	2823	2866	7205	3054	18599	29641	0	288427
D571 Close Combat Tactical Trainer	56282	26110	2823	2866	7205	3054	0	0	0	240187
D582 Engineer CATT	0	0	0	0	0	0	18599	29641	0	48240

realistic, interactive synthetic battlefield. CATT's combination of manned simulators and staff officer workstations enables units to train as a combined arms team in a cost deployments, such as peacekeeping missions, are able to sustain essential warfighting skills when not at their home station. By being able to process a wide array of terrain Mission Description and Budget Item Justification: The Combined Arms Tactical Trainer (CATT) is a family of combined arms simulation systems designed to support programs executed by the Defense Advanced Research Projects Agency (DARPA). By practicing skills in CATT, units are able to make more effective use of scarce and regional contingency missions. The combination of tough field and live fire training and realistic simulation training in CATT is the catalyst to prepare soldiers and their leaders for the uncertainties they will face in an unpredictable world. The projects in this program element support research efforts in the engineering and manufacturing Combined Arms Tactical Trainer (AVCATT), Engineer Combined Arms Tactical Trainer (ENCATT), Fire Support Combined Arms Tactical Trainer (FSCATT) and Air Defense Combined Arms Tactical Trainer (ADCATT). CATT enables units, from crew to the battalion task force level, to conduct a wide variety of combat tasks on a costly live fire and maneuver exercises as well as train tasks deemed too hazardous to conduct in the field. Fielded in both fixed site and mobile/transportable versions, data bases and modify the behavior of the computer generated opposing forces, CATT offers a virtually unlimited array of training options to support the Army's many effective manner. CATT reinforces the successes and corrects the shortcomings of the Simulator Network (SIMNET) and Aviation Network (AIRNET) demonstration the Army's simulation-based Combined Arms Training Strategy. The specific systems that comprise CATT include Close Combat Tactical Trainer (CCTT), Aviation CATT enables both Active and Reserve component units to prepare for real world contingency missions. Units taking their CATT systems with them on operational development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604780A)

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	IS NOI	HEET (R	-2 Exhi	bit)		DATE Fe	February 1	1997
BUDGET ACTIVITY 5 - Engineering	BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NU 060	PE NUMBER AND TITLE 0604780A Com	пт <u>г</u> е ombinec	Arms Ta	actical T	отпте Combined Arms Tactical Trainer (CATT)		PROJECT D571
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D571 Close Combat	Close Combat Tactical Trainer	56282	26110	2823	2866	7205	3054	0	0	0	240187
A. Mission Description planned product impedevelop a networked support systems, corwill allow soldiers to enhance realism and	A. Mission Description and Justification: Project D571 - Close Combat Tactical Trainer: Provides for engineering and manufacturing development (EMD) and preplanned product improvements for the Close Combat Tactical Trainer (CCTT) which will enhance readiness of both active and reserve component forces. The program will develop a networked system of interactive computer driven simulators, emulators and semi-automated forces that replicate combat vehicles and weapon systems, combat service support systems, and command and control systems to create a fully integrated real-time collective task training environment. This trainer will allow soldiers to practice, repetitively, techniques which, if performed on real equipment, would be too hazardous, time-consuming and-expensive. These trainers enhance realism and allow soldiers and units to learn tactical combat lessons on maneuver, command and control, and improved teamwork for increased survivability.	at Tactical Tr at Tactical Tr r driven simu nd command es which, if J	se Combat 'ainer (CCTT lators, emula and control to erformed or erformed or that lessons or that	Tactical Tractical Tractical Tractical Tractical Sensitive Tractical Sensitive Tractical Eduipn Tractical Ed	ainer: Provi l'enhance recinitate a fully nente, would nent, would rt, command rt, command rt, command	des for engii adiness of bv 1 forces that integrated re be too hazar and control,	neering and to the active and replicate corsal-time colledous, time-colledous, time-condustrime and improven	nanufacturi 1 reserve co nbat vehicle ective task ti onsuming a	ng developm mponent for es and weapc raining envir nd expensive k for increas	nent (EMD) ces. The pr on systems, onment. These tra e. These tra ed survivab	and pre- ogram will combat nis trainer iners
Acquisition Strateg	Acquisition Strategy: Competitive cost plus award fee contract for EMD phase. Competitive procurement against performance specifications.	fee contract	for EMD pha	ase. Compe	titive procur	ement again	st performan	ce specifica	ıtions.		
FY 1996 Accomplishments: 47655 Compless softwar	Shments: Completed spiral build 7. Produced and delivered a fixed company team site (38 modules) and 2 mobile platoon sets (11 modules); performed software/hardware physical configuration audit; conducted Preproduction Qualification Test (PPQT) for both fixed and mobile systems and prepared for fixed and mobile Initial Operational Test and Evaluation (IOT&E)	oduced and de onfiguration a	livered a fix udit; conduc st and Evalu	ed company sted Preprod	' team site (3 luction Qual	18 modules) ification Tes	and 2 mobile t (PPQT) for	platoon se both fixed	ts (11 modul and mobile s	es); perforn systems and	ned prepared
• 6317 • 2310 Total 56282	Maintained support services to the program office. Provided government program management, engineering, technical and contract support.	o the progran n managemen	ı office. ıt, engineerii	ng, technical	and contrac	t support.					
FY 1997 Planned Program: • 20750 Comple	rogram: Complete deliveries, complete semi-automated forces improvements, conduct and support development testing and IOT&E, correct deficiencies from	e semi-autom	ated forces i	mprovemen	ts, conduct a	nd support c	levelopment	testing and	IOT&E, con	rect deficier	icies from
. 2612	testing, complete documentation and audit trail, and prepare for pre-planned product improvements. Maintain support services to the program office.	ion and audit he program c	trail, and pre ffice.	pare for pre	-planned pr	oduct impro	/ements.				
2110		management	, engineering Business Te	s, technical a	and contract ransfer (SBI	engineering, technical and contract support. Business Technology Transfer (SBIR/STTR) Programs.	ograms.				
Total 26110				3	,	`)				
FY 1998 Planned Program: • 2823 Execut Total 2823	rogram: Execute Engineering Change Proposals (ECPs) and minor software changes based on user experience and operational testing.	Proposals (E	CPs) and min	10r software	changes ba	sed on user e	xperience ar	nd operation	al testing.		
Project D571				Page 2 of 5 Pages	5 Pages			Exhib	Exhibit R-2 (PE 0604780A)	(604780A)	
				913							Item 95

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUST	TFICAT	ION SH	IEET (R	-2 Exhit	oit)		DATE Feb	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopme	nt	DE NO	PE NUMBER AND TITLE 0604780A Com	TILE ombined	Arms Ta	actical Tı	רדות כ Combined Arms Tactical Trainer (CATT)		PROJECT D571
FY 1999 Planned Program: • 2866 Continue ECPs and minor software changes Total 2866	tware changes	based on us	ser experien	ce and opera	based on user experience and operational testing.	ත්				
B. Project Change Summary FY 1997 President's Budget Request Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud		FY 1996 57742 59475 -3193 56282	Ħ	<u>FY 1997</u> 26713 26110 0	FY 1998 3033 2823	EX 1999 3095 2866	99 95 95			
Change Summary Explanation: FY 96 project funds decremented (-1460) for undistributed Congressional reductions and rescissions.	ect funds decr	emented (-1-	460) for unc	distributed C	ongressiona	l reductions	and rescissi	ons.		
C. Other Program Funding Summary.	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
OPA3, Appropriation	29259	78342	92968	116141	34106	33546	0	0	Compl 0	Cost 423242
Military Construction, A Appropriation Operation and Maintenance, A Appropriation	10500 394	11900	13300 6303	7300 10929	0 10661	0 10190	10411	10636	0 Cont'd	50500 Cont'd
D. Schedule Profile	FY 1996	~	F.	FY 1997	-	FY 1998		·	Y 199	•
Spiral Build 7 Quick Start Decision PPQT Fixed System/Formal Qualification Test IOT&E Fixed System PPQT/IOT&E Mobile System	° * * *	4	7 ×	~ ××	4	7		7	m	4
* Completed Milestones										
Project D571			Page 3 of 5 Pages	Pages			Exhibit	Exhibit R-2 (PE 0604780A)	04780A)	
			914							Item 95

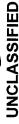




RDT&E F	PROGRAM ELEMENT		/PROJECT C	OST BI	REAKDO	COST BREAKDOWN (R-3)	3)	DATE FO	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Manufacturing	Development		PE NUMBER AND TITLE 0604780A Com	AND TITLE A Comb	ined Arm	ori⊓⊑ Combined Arms Tactical Trainer (CATT)	Trainer ((РРОЈЕСТ D571
A. Project Cost Breakdown Contractor Development Contractor Program Management/System Engineering Program Office/Technical Support Government Agency Support Support Contracts Engineering Changes/Software Changes SBIR/STTR Total	nent/System Engineer upport t re Changes	ring	EY 1996 34617 13038 2300 3590 2737 0	EY 1	EY 1997 17004 3746 2110 1039 1573 0 638 26110	FY 1998 0 0 250 216 0 2357	FY 1999 0 0 250 106 0 2510			
Performing Organizations Contractor or Contract Government Method/Type Performing or Funding Activity Product Description	ations Contract Method/Type Award or or Funding Obligation Vehicle Date	ing ity <u>AC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Loral FSC C-CPAF/ T&M/FFP	IIIZALIOIIS .F/ Nov 92 FFP	195831	195831	112776	47655	20750	2357	2510	9783	195831
Support and Management Organizations NAWC-TSD MIPR Dec 97 RCI T&M Feb 93 CECOM MIPR Nov 9 MICOM MIPR Jan 94 Sherikon T&M Oct 94 Miscellaneous Various Variou SBIR/STTR Test and Evaluation Organizations: None	Organizations Dec 92 Feb 93 Nov 93 Jan 94 Oct 94 S Various izations: None	12532 3687 7655 1020 4400 15065	12532 3687 7655 1020 4400 15065	7146 3687 3350 1020 1800 12068	2300 0 2490 0 1800 2037	2110 0 1812 0 800 638	250 0 0 0 0 216	250 0 0 0 0 106	476 0 0 0 0	12532 3687 7652 1020 4400 14427 638
Project D571			Page	Page 4 of 5 Pages	S		Exhil	Exhibit R-3 (PE 0604780A)	0604780A)	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BF	REAKDC	WN (R-	ĺ 	DATE Fe	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604780A Com	AND TITLE A Combi	PE NUMBER AND TITLE 0604780A Combined Arms Tactical Trainer (CATT)	Tactical	Trainer (C		PROJECT D571
Subtotal Product Development Subtotal Support and Management	Total Prior to FY 1996 112776 29071	FY 1996 47655 8627	FY 1997 20750 5360	FY 1998 2357 466	FY 1999 2510 356	Budget to Complete 9783	Total <u>Program</u> 195831 44356
Subtofal Lest and Evaluation Total Project	141847	56282	26110	2823	2866	10259	240187
Project D571	Page 5 of 5 Pages	8		EX.	Exhibit R-3 (PE 0604780A)	0604780A)	
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RDT&E BUDGET ITEM JUS	FEM JUS	TIFICA	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE FeI	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Developm	ent)90 06(PE NUMBER AND TITLE 0604801A Avial	тіт с Aviation -	Enginee	ring Dev	PE NUMBER AND TITLE 0604801A Aviation - Engineering Development		PROJECT DC45
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC45 Aircrew Integrated Systems (ACIS)	4885	5403	5109	2909	2076	2065	2172		2181 Continuing Continuing	Continuing

aircraft to improve crash protection and enhance aircrew survivability; and follow-on air vehicle integration and test of Air Warrior program effort to enhance and maximize Engineering Manufacturing Development (EMD) This project provides engineering and manufacturing development for those systems and items of equipment which are threat systems; product improvements to existing helmets to improve performance and increase commonality; development and adaptation of airbag technology to Army aircrew performance in force modernized aircraft. Maximum advantage will be taken of simulation to reduce program technical risk through early user evaluation and to reduce program design and test cost and schedules. Both joint and service independent efforts will be pursued under the scope of this project. The project in this Program performance, aircrew comfort, aircrew and aircrew station interface, safety, and survivability. These programs include: advanced laser protection against emerging new unique and necessary for the sustainment and enhanced survivability of Army aircrews and passengers on the future integrated battlefield and during related training activities. EMD programs will focus on air vehicle integration, airworthiness qualification and user evaluation of multiple technologies to improve aircrew mission A. Mission Description and Budget Item Justification: Project DC45 Aircrew Integrated Systems (ACIS) formerly Aviation Life Support Equipment (ALSE) Element supports research efforts in the EMD phase of the Acquisition Strategy and is correctly placed in Budget Activity 5.

developed and will be used for production competition. A maximum of two competitive contractor teams will develop a functional analysis and breadboard mock-up of the interface drawings (except that the initial production quantity will be procured sole-source from the developer.) The CABS A-kit hardware will be aircraft specific and will Acquisition Strategy: DC45 - The Cockpit Air Bag Systems (CABS) B-kit components will be competitively procured using an approved performance specification and be procured competitively. CABS will be installed via field retrofit and production line incorporation (where applicable.) Pre-Planned Product Improvement (P3I) of the helmet is awarded, as required, to the helmet developer, Gentex Corp. Performance specifications for the joint service advanced laser eye protection program are being Air Warrior ensemble during a Program Definition and Risk Reduction phase. Then, one team will be selected to develop the Air Warrior ensemble during a combined Program Definition and Risk Reduction (PDRR) and EMD phase.

FY 1996 Accomplishments:

- Continued CABS EMD for AH-64 Apache and adapted CABS components for common application to other aircraft platforms,
- Initiated transition from Joint CABS Program Definition Risk Reduction (PDRR) to UH-60 CABS EMD program (including in-house effort) 2932
 - 718 Continued AIHS (Aircrew Integrated Helmet System) P³I efforts in EMD
- 265 Initiated EMD for Advanced Laser Eye Protection (LEP) effort (Joint Service)

otal 488;

Project DC45

Page 1 of 6 Pages

Exhibit R-2 (PE 0604801A)

RDT&E BUDGET ITEM JUST	FEM JUS	TIFICAT	ION SE	IFICATION SHEET (R-2 Exhibit)	-2 Exhil	bit)		DATE Feb i	February 1997	76
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developmo	ent	PE NC 000	PE NUMBER AND TITLE 0604801A Aviation	tion	Enginee	ring Dev	- Engineering Development		PROJECT DC45
 FY 1997 Planned Program: 3714 Continue EMD for UH-60 CABS 898 Continue AIHS P³I efforts in EMD 670 Complete EMD for the Advanced LEP (Joint Service) 121 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) Programs Total 5403 	ABS 1 EMD anced LEP (Joi tesearch/Small	int Service) Business Te	chnology T	ransfer (SBI)	R/STTR) Pro	ograms				
FY 1998 Planned Program: • 5109 Initiate Air Warrior EMD with combined PDRR effort Total 5109	ith combined F	DRR effort								
FY 1999 Planned Program: • 6067 Continue Air Warrior EMD with combined PDRR effort Total 6067	with combined	PDRR effoi	ŧ							
B. Project Change Summary Previous President's Budget Appropriated Value		FY 1996 5002 5142	FY	FY 1997 5518 5403	FY 1998 7596	FY 1999 6910	9 <u>9</u> 10			
Adjustments to Appropriated value Current Budget Submit/President's Budget		-23 / 4885		5403	5109	2909	22			
Change Summary Explanation: Funding: FY98 reduction due to execution difficulties (-1700) FY98/99 also reduced for efficiencies (FY98 -787/FY	FY98 reduction due to execution difficulties (-1700) FY98/99 also reduced for efficiencies (FY98 -787/FY99 -843)	o execution (for efficien	difficulties (-1700) -787/FY99 -	843).					
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To	Total
RDTE, A BA 4 PE 0603801A Project DB45,	9401	8913	2545	2460	0	0	2801	2817	Cont	Cont
ACIS - AD Aircraft Procurement Army (APA) (ACIS) SSN AZ3110	7142	13280	12472	10003	8982	8920	23856	36827	Cont	Cont
Project DC45			Page 2 of 6 Pages	5 Pages			Exhibi	Exhibit R-2 (PE 0604801A)	34801A)	
			918							Item 96





RDT&E BUDGET ITEM JUS	ET ITI	EM JUSTI	일	틷	TIFICATION SHEET (R-2 Exhibit)		₹-2 E	chib	€			DATE F	February 1997	V	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	ring D	evelopment	<u> </u>		PE NUMBER AND TITLE 0604801A Avia	ER AND	ОТІТІЕ Aviation - Engineering Development	n - E	ngine	ering	Deve	mao	i i		PROJECT DC45
D. Schedule Profile	-	FY 1996	-	-	FY 1997			-	FY	FY 1998	,	. -	FY 1999	666	-
AH-64 CABS			4	-	7	5	4	-	7	າ	4	-	7	3	4
Preliminary Design Review	**		* ·												
UH-60 CABS			<												
Contract Award			*												
Critical Design Review				*	,										
Qualification Testing Develonment Test (DT)					×	×									
LRIP Decision						;	×								
AIRS FI	*														
Conduct Demo on Static AH-64	X	*													
Develop Breadboard Prototype			*												
Continue Breadboard Prototype Dev				*											
Airworthiness Test of Prototype					×	;									
Flight Test Breadboard on AH-64						×									
Advanced Laser Eye Frotection (LEF)		*													
Conceptual Design Review		¢ *			×										
Preliminary Design Review						×									
Initiate Design Verification Testing							×								
Air Warrior															
Begin combined advanced									×						
development/EMD design testing										;					
Air Warrior Preliminary Design Review										×	>				
Air Warrior Critical Design Review											<	>			
initiated												(
Air Warrior production component													×		
requirements evaluated															
Air Warrior prototype testing initiated														×	
Project DC45				Pag	Page 3 of 6 Pages	səğr					=xhibit	R-2 (PE	Exhibit R-2 (PE 0604801A))1A)	

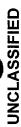
RDT&E BUDGET ITEM JUSTIFICAT	IFICATION SHEET (R-2 Exhibit)	DATE February 1997	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604801A Aviation - Engineering Development	evelopment DC45	્રા ક
D. Schedule ProfileFY 19961234Continue Air Warrior EMD/prototypedevelopment	FY 1997 FY 1998 1 2 3 4 1 2 3 ²	FY 1999 4 4 1 2 3 4 X	
*Denotes milestone completed			· · · · ·
Project DC45	Page 4 of 6 Pages	Exhibit R-2 (PE 0604801A)	
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RD	T&E PRO	RDT&E PROGRAM ELEMENT		PROJECT C	SOST BI	REAKD	COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ıg and Manı	ıfacturing D	evelopmen	ť	PE NUMBER AND TITLE 0604801A Avia	AND TITLE	on - Engir	- Engineering Development	velopme		PROJECT DC45
A. Project Cost Breakdown Product Development Organizations Support and Management Organizations Test and Evaluation Organizations SBIR/STTR Total Project	reakdown ent Organizations ement Organizations i Organizations	s tions		EY 1996 2536 2109 240 0 0	FY	FY 1997 3448 1341 493 121 5403	FY 1998 3746 903 460 0 5109	FY 1999 4558 841 668 0			
B. Budget Acquisition History and Planning Information	tion History an	d Planning Info	rmation								
Performing Organizations Contractor or Contra Government Metho	izations Contract Method/Type		Perform	Project	Total					: •	
Performing or Funding Activity Vehicle Product Development Organizations	or Funding <u>Vehicle</u> ent Organizatio	Obligation <u>Date</u>	Activity <u>EAC</u>	Office <u>EAC</u>	Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
AH-64 CABS Simula - Phoenix,	SS-CPFF	May 1994	2128	2128	1550	578					2128
UH-60 CABS Simula - Phoenix,	SS-CPFF	May 1996	3994	3994		1734	2260				3994
AZ AIHS P³I Gentex - Carbondale,	SS-CPFF	Dec 1997	873	873			873				873
PA Advanced LEP AOTEC - South	SS-CPFF	Jan 1997	315	315			315				315
Air Warrior Contractor TRD	C-CPFF.	Jan 1998	·					3746	4558	Cont	Cont
Miscellaneous	SS/C-CPFF	thru FY 1996			9735	224					6566
SBIR/STTR							121				121
Project DC45				Page	Page 5 of 6 Pages	S		Exhi	Exhibit R-3 (PE 0604801A)	3604801A)	
					921						Item 96

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	GRAM ELE	MENT/PR	OJECT	COST B	REAKDO	OWN (R-	3)	DATE Fe	February 1997	260
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	nufacturing D	evelopment	.	PE NUMBER 060480	PE NUMBER AND TITLE 0604801A Aviati	on - Engir	neering De	PE NUMBER AND TITLE 0604801A Aviation - Engineering Development		PROJECT DC45
Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle	pe Award or Obligation <u>Date</u>	Perform Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Support and Management Organizations Various MIPR Variou Organizations Test and Evaluation Organizations Government MIPR	nnizations Various ons		,	6474	2109	1341	903	841	Cont	Cont
Agencies Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	‡‡			11285 6474 2989 20748	2536 2109 240 4885	3569 1341 493 5403	3746 903 460 5109	4558 841 668 6067	Cont Cont Cont	Cont Cont Cont
Project DC45			$P_{\mathcal{C}}$	Page 6 of 6 Pages	S)		Ä	Exhibit R-3 (PE 0604801A)	0604801A)	
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	RDT&E BUDGET ITEM JUS	EM JUS		TION S	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	997
8UD(5 -	вирсет астіvіту 5 - Engineering and Manufacturing Developm	evelopm	ent	PE N 06(PE NUMBER AND TITLE 0604802A Weal Development	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	and Mun	litions - E	Engineer	ing	
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	14845	23661	3577	24865	49143	45398	6269	11404	Continuing	Continuing
D134	Objective Individual Combat Weapon Engineering Development (OICW)	0	0	0	0	1777	1765	3744	4632	Continuing	Continuing
D284	D284 Multipurpose Individual Munition	8172	13813	2922	18964	23212	11147	0	0	0	78230
D531	105mm Howitzer Ammunition Improvement	3432	5067	0	0	0	0	0	0	0	19838
D613	D613 Mortar Systems	2768	0	0	0	10966	13225	0	0	0	46942
D695	D695 XM982	0	0	655	5901	10729	16169	0	0	0	33454
D712	D712 Non-Lethal Programs	0	3215	0	0	0	0	0	0	0	3215
DAS1	DAS1 Small Arms Improvement	473	1566	0	0	2459	3092	3235	6772	Continuing	Continuing

Computer (IMBC) and type classification of training and illumination cartridges for the 120mm mortar. The XM982 extended range Dual Purpose Improved Conventional Mission Description and Budget Item Justification: Provides for engineering development of weapons and munitions systems. The Multi-Purpose Individual Munition range to 47 kilometers. The non-lethal program provides for force response options for non-lethal immobilization of personnel and materiel through development of non-Munition (DPICM) combines base burn and rocket assisted technologies in an extended range 155mm artillery projectile. It will extend the range of the M198, M190A5, lethal capabilities for multiple weapon systems/platforms. The small arms improvement program develops technology to enhance lethality, target acquisition, fire control, M190A6, 155mm Paladin and the Light Weight Howitzer to approximately 37 kilometers, with the Modular Artillery Charge System (MACS) in Crusader extending the ammunition effort supports development of ammunition for the M119A1 Howitzer. The mortar systems effort supports qualification of an Improved Mortar Ballistic Projects within this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are, therefore, training effectiveness and /or reliability for small arms weapon systems. This project develops a universal mounting bracket for the MK19-3 Grenade Machine Gun. (MPIM) provides the infantry with a fire-and-forget weapon capable of defeating enemy forces in buildings, bunkers and lightly armored vehicles. The howitzer correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604802A)

1 Spi adi 3	repruary 1997
	PROJECT
0604802A Weapons and Munitions - Engineering	D284
s - Engin	eering

				-						
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D284 Multipurpose Individual Munition	8172	13813	2922	18964	23212	11147	0	0	0	78230

Munition/Short Range Anti-Tank Weapon (MPIM/SRAW) is capable of being fired quickly from its carrying configuration and can be safely fired from an enclosure for the response to regionally based threats. The Army and U. S. Marine Corps have signed a memorandum of agreement for a horizontal technology integration effort utilizing the Provides the infantry with a fire and forget weapon capable of defeating enemy forces in buildings, bunkers, and lightly armored vehicles. The Multiple Purpose Individual A. Mission Description and Justification: Provides for an Engineering Manufacturing Development (EMD) of a lightweight, shoulder fired, multiple purpose weapon. close battle. It will replace the current AT4 system which was designed to defeat only light armor. This system will have tremendously increased lethality over the AT4 and will be multiple target capable. System design will allow for growth, service life extension and technology insertion to support the U. S. Army mission of crisis USMC SRAW flight module/launcher as the carrier for the MPIM warhead.

mitigation effort) was awarded in October 1996 with an EMD Phase 2 (maturation) contract (option) award in April 1998. Funding for initial production facilitization (IPF) 1994 and the 18-month U. S. Army technology demonstration MPIM/SRAW contract awarded in January 1995. The MPIM/SRAW EMD Phase 1 contract (18 month risk and long lead items (LLI) procurement begins in FY 01 to facilitate maintaining an FY 02 First Unit Equipped (FUE). Low rate initial production (LRIP) will begin in FY Acquisition Strategy: The MPIM/SRAW is a 65-month two phase EMD program which will leverage off the USMC 42-month SRAW EMD contract awarded in June 02. Full rate production begins in FY 04.

FY 1996 Accomplishments:

- 1132 Preparation for Milestone II Decision
- 1003 Preparation of Model EMD contract (Alpha Acquisition)
 - 2500 Awarded Phase I of EMD contract
- 610 Initiated warhead module design improvements
- 2057 Procured EMD Phase 1 missile hardware to support flight tests
 - 270 Conducted survey missile test
- 340 Conducted wind tunnel test
- 260 Initiated simulation validation verification and analysis (VV&A)
- al 817

Project D284

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Exhibit R-2 (PE 0604802A)



	RDT&E BUDGET ITEM JUSTIFICATIO	TIFICATION SHEET (R-2 Exhibit)	DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering	BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	- Engineering	PROJECT D284
FY 1997 Planned Program:	Le Phase I EMD effort ste warhead module design improver Phase 2 EMD contract ste simulation VV&A thase I EMD flight tests and analyprocurement of missile hardware for integrated logistics support (ILS), q is system level specification for preliablesiness Innovation Research/Small	ments ysis r pre-production test (PPT) flight tests uality and environmental programs to support EMD minary design review (PDR) Business Technology Transfer (SBIR/STTR) Programs		·
FY 1998 Planned Program:	rogram: Conduct system level analysis Initiate procurement of range support hardware for PPT flights Support PDR Prepare and conduct early user demonstration (EUD)	thts		
FY 1999 Planned Program:	continue Phase 2 EMD effort Complete procurement of missile hardware for PPT flight tests Conduct PPT flight tests Complete procurement of range support hardware for PPT flight tests Complete procurement of range support hardware for PPT flight tests Complete procurement of range support hardware for PPT flight tests Conduct grenade safe and arm (S&A) trade studies, analysis and tests Design and fabricate missiles for electromagnetic environmental effects (E3) analyses and tests Continue ILS, quality and environmental programs to support EMD Prepare for critical design review (CDR) Initiate procurement of missile hardware for pre-production qualification testing (PPQT) Conduct lethality analysis	sits Tight tests s and tests ental effects (E3) analyses and tests ort EMD qualification testing (PPQT)		
Project D284	Pag	Page 3 of 24 Pages	Exhibit R-2 (PE 0604802A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	STIFICATI	ON SHEET (R-2 Exhit	oit)		DATE Fe l	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	nent	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	отпе Weapons ent	and Muni	itions - E	ingineeri		РКОЈЕСТ D284
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 11973 12309 -4137 8172	FY 1997 14108 13813 0	FY 1998 9353 2922	FY 1999 17346 18964	67.9 67.9			
Change Summary Explanation: Funding: FY 96 - Project decremented for Army reprogramming to higher priority requirements. FY 98 (-6431) reduction due to Army restructure of the MPIM/SRAW program to an incremental EMD. FY 99 (+1618) increase due to Army restructure of the MPIM/SRAW program to an incremental EMD. Schedule: The Army has restructured the MPIM/SRAW program to an incremental EMD, an 18 month risk mitigation (Phase 1) prior to award of the 47-month EMD phase (Phase 2) option.	rmy reprogramm my restructure or ny restructure of IM/SRAW progr	reprogramming to higher priority requirements. restructure of the MPIM/SRAW program to an incremental EMD. estructure of the MPIM/SRAW program to an incremental EMD. SRAW program to an incremental EMD, an 18 month risk mitigat.	ty requirements program to an program to an i il EMD, an 18	s. incremental ncremental E month risk n	EMD. 3MD. nitigation (F	hase 1) prio	or to award o	fthe
C. Other Program Funding Summary PE 0603313A, Project D387 Missile Procurement, Army, SSN C09100 (Multi-0 Purpose Individual Munition)	FY 1997 625 0	FY 1998 FY 1999 0 0 0 0	9 FY 2000 0 0 0 0	FY 2001 0 5969	FY 2002 0 32195	FY 2003 0 27877	To Comp 0 1051000	<u>Total Cost</u> 5532 1117041
D. Schedule Profile 1 2 3 Preparation for Milestone II Model EMD contract preparation	36 4 * * * * *	FY 1997	4	FY 1998 2 3	8 £ 4	-	FY 1999 2 3	4
Award EMD Phase I contract Complete telemetry missile flight tests Corporate/government Phase 1 reviews Award EMD Phase 2 contract Complete EUD tests Conduct PDR Complete PPT X* Denotes completed effort	*×	×	×	×	×× ×			×
Project D284	P	Page 4 of 24 Pages			Exhibi	Exhibit R-2 (PE 0604802A))604802A)	

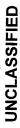




RDT&E PROGRAM ELEMENT/	/PROJECT	I	REAKD	COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ent	PE NUMBER AND TIT 0604802A We Development	PE NUMBER AND TITLE 0604802A Weap Development	ons and M	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	Engineel		РРОЈЕСТ D284
A. Project Cost Breakdown Primary hardware development Program management support SBIR/STTR Developmental Test and Evaluation Total	EY 1996 4851 2991 0 330 8172		FY 1997 10549 1827 337 1100 13813	EX 1998 0 2572 0 350 2922	EY 1999 14300 2578 0 2086 18964			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to <u>Complete</u>	Total <u>Program</u>
Lockheed - Martin SS/CPIF Oct 96 7000	7000	0	4851	2149	0	0	0	7000
(EMD phase 1) Lockheed-Martin SS/Cost Apr 98** 43100 (EMD phase 2) sharing	43100	0	0	8400	0	14300	20400	43100
Support and Management Organizations PM CCAWS, RSA PO MICOM, RSA, AL PO		000	1150	813	1205	1237	3642	8047
SBIR/STTR Test and Evaluation Organizations		0	338	337	80/	747	3235	337
TECOM: APG PO Misc.		0 0	330	1100	350	2086	3972 50	7838 50
**April 98 contract to be awarded using FY 1997 funds. Project D284	P_{ℓ}	Page 5 of 24 Pages	<i>3</i> 2		Exhit	Exhibit R-3 (PE 0604802A)	0604802A)	
		927						Item 97

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BREAK	KDOWN (R-	3)	DATE Fe	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	LE sapons and N	funitions ·	- Engineer		PROJECT
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1996 FY 1996 4851 2991 330 8172	1996 FY 1997 4851 10549 2991 2164 330 1100 8172 13813	FY 1998 2572 350 2922	FY 1999 14300 2578 2086 18964	Budget to <u>Complete</u> 20400 9937 4022 34359	Total Program 34700 15087 6458 56245
Project D284	Page 6 of 24 Pages		Ж	Exhibit R-3 (PE 0604802A)	0604802A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fe	February 1997	795
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Jevelopm	ent	PE N 060 Dev	PE NUMBER AND TITLE 0604802A Weal Development	TITLE Veapons ot	and Mun	itions - E	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development		РКОЈЕСТ D531
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D531 105mm Howitzer Ammunition Improvement	3432	5067	0	0	0	0	0	0	0	19838

A. Mission Description and Justification: This project provides for the fielding of an extended range 105mm artillery projectile for the M119A1 Howitzer and development of self-destruct fuzing technology for munitions. Acquisition Strategy: Initial low rate production of cartridge, artillery, 105mm Dual Purpose Improved Conventional Munition (DPICM), XM915, begins in FY 1997 and will be sole sourced to the developer under fixed price contracts.

FY 1996 Accomplishments:

- 1688 Self destruct fuze contract
- 300 Projectile metal parts contract
- 1444 Engineering evaluation of performance
 - Total 3432

FY 1997 Planned Program:

- 1700 Load, assembly and pack (LAP) of cartridge for development test and evaluation
 - 1785 Conduct DT&E tests
- 1458 Test and evaluation management, engineering evaluation of performance
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs
 - Total 50

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program: Project not funded in FY 99

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	USTIFICATION	ON SHEET (R	-2 Exhib	it)	DATE Febr	February 1997	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	pment	PE NUMBER AND TITLE 0604802A Weal Development	пте Veapons a nt	PENUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	- Engineerin		PROJECT D531
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 3520 3619 -187 3432	F <u>Y 1997</u> 3076 5067 0 5067	FY 1998 0 0	FY 1999 0 0			
Change Summary Explanation: FY 97 (+1991) Congressional increase for continued development of the XM915/916 munition.	nal increase for conti	nued development of	the XM915/9	16 munition.			
C. Other Program Funding Summary Procurement, Ammunition, Army; Cartridge, FY 1996 Artillery, 105mm DPICM, SSN E53500	FY 1997 14172	FY 1998 FY 1999 0 0	FY 2000 0	FY 2002 FY 2001 0 0	0 0 0	To Compl 0	Total Cost 14172
D. Schedule Profile FY	FY 1996 2 3 4	FY 1997	4	FY 1998 2 3	F 1 2	FY 1999 2 3	4
Complete EMD testing Projectile metal parts contract Eng eval of perf; follow up on all testing Type Classification	**	×× ×					
*Denotes a completed milestone							
Project D531	I	Page 8 of 24 Pages		Э	Exhibit R-2 (PE 0604802A)	04802A)	
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RD	T&E PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT (SOST B	REAKDO	WN (R-	3)	DATE Fe	February 1997	76
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	g and Manu	facturing C)evelopment		PE NUMBER AND TIT 0604802A We Development	PE NUMBER AND TITLE 0604802A Weapor Development	ons and N	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	Enginee		РРОЈЕСТ D531
A. Project Cost Breakdown Program engineering and management support SBIR/STTR Contract engineering support Test and evaluation support Total	eakdown g and manageme g support support	nt support		FX 1996 1296 0 1420 716 3432	EX	FY 1997 1458 124 0 3485 5067	FY 1998 0 0 0	FY 1999 0 0 0			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Activ	tion History and izations Contract Method/Type or Funding	I Planning Info Award or Obligation	ing vity	Project Office	Total Prior to		·			Budget to	Total
Activity Vehicle Product Development Organizations	Vehicle ent Organization	<u> </u>	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
TACOM:ARDEC Chamberlain: SAAP Scranton	ALLOT OPEN/CPIF	Oct 92 Sep 93	5527 1100	5527 1100	4829 1244	1296 270	1582	0 0	00	0 0	7707 1514
Amrom Corp. KDI Olin	OPEN/CPIF OPEN/CPIF OPEN/FP	Sep 93 Sep 93 Sep 93	590 3914 117	590 3914 117	858 4022 117	0 1150 0	000	000	000	000	858 5172 117
Norris Industries OPEN/CPIF Sep 93 Dayron Corp. OPEN/CPIF Sep 94 LSAAP FP/ALLOT Jul 94 Support and Management Organizations: None	OPEN/CPIF OPEN/CPIF FP/ALLOT gement Organiz	Sep 93 Sep 94 Jul 94 zations: None	371 238 1792	371 238 1792	371 238 988	000	0 0 1700	000	000	000	371 238 2688
Test and Evaluation Organizations TECOM-YPG, AZ SBIR/STTR Subtotal Product Development	n Organizations		3193	3193	663	716	1661 124 3282	0	0	0	3040
Subtotal Support and Management Subtotal Test and Evaluation Total Project	l Management aluation				663 13330	716 3432	1785				
Project D531				Page	Page 9 of 24 Pages	sə.		Exhik	Exhibit R-3 (PE 0604802A)	0604802A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (F	≀-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Jevelopm	ent	PE N 06(PE NUMBER AND TITLE 0604802A Weak Development	тпсе Veapons nt	and Mun	itions - E	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development		РRОЈЕСТ D613
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D613 Mortar Systems	2768	0	0	0	10966	13225	0	0	0	46942

A. Mission Description and Justification: This program provides funds to develop existing and emerging technology to enhance the effectiveness, lethality, versatility of project provides for the qualification of a full range training cartridge for the 120mm Battalion Mortar System. This cartridge provides a realistic training alternative at a use, mobility, and accuracy of mortar systems. Current mortar systems include conventional ammunition with a variety of fuzing applications, weapons that range from man-portable 60mm to vehicle-mounted 120mm mortars, and related equipment such as fire control, mortar ballistic computer, training devices, and ammunition. This development of a digital Mortar Fire Control System (MFCS) which will reduce set up times by a factor of 8, while increasing accuracy. It will be compatible with the lower cost than training with high explosive service ammunition. It also provides for the qualification of a mortar illumination round (conventional and infrared) Additional dollars were added in FY96 to fund Task Force XXI Advanced Warfighting Experiment on Mortar Fire Control. Starting in FY 2000, it provides for Advanced Field Artillery Tactical Data System (AFATDS) and fully integrate mortars into the fire support plan.

Acquisition Strategy: The full range training cartridge enters production with the developer as an option to the development contract in FY 96. Follow-on buys are competitive. The illumination round enters production in FY 97.

FY 1996 Accomplishments:

- Program Manager in-house costs
- Shell body producibility
- Task Force XXI demonstration support 1439
- Increment container process optimization 116
 - 227
- XM931 testing Fin optimization/load, assembly and pack optimization
 - XM930 test hardware fabrication
 - Total

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program: Project not funded in FY 99

Project D613

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Exhibit R-2 (PE 0604802A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	TFICATI	ON SH	EET (R	2 Exhib	oit)		DATE Febru	February 1997	76
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	velopme	nt	PE NUN 0604 Deve	PE NUMBER AND TITLE 0604802A Weal Development	TLE eapons t	and Mun	itions - E	PENUMBER AND TITLE O604802A Weapons and Munitions - Engineering Development		РРОЈЕСТ D613
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Values FY 1998 Pres Bud Request		FY 1996 1556 1600 +1168 2768	FY 1997 0	0 0 0	FY 1998 0 0	FY 1999 0	81 0 0			
Change Summary Explanation: Funding - FY 96 (+1168) increase to fund Task Force XXI Advanced Warfighting Experiment on Mortar Fire Control	.68) increase	to fund Task	Force XXI	Advanced	Warfighting	; Experiment	t on Mortar	Fire Control		
C. Other Program Funding Summary Procurement, Ammunition, Army: SSN E25504, XM929 SSN E25507, XM931 SSN E25503, XM930 SSN E25501, XM934 Other Procurement, Army: K99200 (IMBC) Other Procurement, Army: K99300 (MFCS)	FY 1996 65812 18244 0 0 4827	FY 1997 34967 50952 25975 0 6841	EY 1998 0 24432 0 29908 0	FY 1999 0 32159 0 29888 0	EY 2000 26266 40124 0 22884 0	EY 2001 26913 41356 0 0	EY 2002 27793 30154 0 0 0 38003	EY 2003 24921 21216 0 0 38197	To Compl 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Total Cost 260039 258637 32240 161042 38649 76860
D. Schedule Profile	FY 1996	_	FY ,	FY 1997	-	FY 1998	∞ ~	FY	FY 1999	_
Conduct DT/OT of the IMBC Type classify (LP) the IMBC Type Classify (standard) the IMBC Type classify XM930 Illumination round Type classify XM931 FRTC	` *	*	× ×	n ×	-	٧		-	n	†
*Completed milestone										
Project D613		Pc	Page 11 of 24 Pages	(Pages			Exhibi	Exhibit R-2 (PE 0604802A)	1802A)	
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RD	T&E PROG	SRAM ELI	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT (SOST B	REAKDO	JWN (R-	3)	DATE Fe	February 1997	197
вирсет астічіт 5 - Engineering and Manufacturing Development	g and Manu	ıfacturing L	Jevelopment		PE NUMBER AND TITLE 0604802A Weal Development	AND TITLE 2A Weap ment	ons and N	PENUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	- Engineer		РРОЈЕСТ D613
A. Project Cost Breakdown Product development Management /engineering support Test and evaluation Total	reakdown 1t eering support		·	EY 1996 2059 . 482 . 227 2768		FY 1997 0 0 0	FY 1998 0 0	FY 1999 0 0 0			
B. Budget Acquisition History and Planning Information	tion History and	d Planning Inf	ormation								
Performing Organizations Contractor or Contra Government Metho Performing or Fun Activity Vehicl	izations Contract Method/Type or Funding	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations Pocal industries, SS/CPIF	ent Organizatio SS/CPIF	ons 2Q95	3392	3392	3344	48		0	0	0	3392
Miltope: Hope	C/FP	1Q95	310	310	310	0	0	0	0	0	310
Hull, AL ARDEC MTA:	WR SS/FP	2Q94 3Q94	1124 351	1124 351	1124 351	1439 0	0 0	0 0	0 0	0 0	2563 351
Huntsville, AL Mitre:	SS/FP	3Q94	78	78	78	0	0	0	0	0	78
Tinton Falls, NJ ARDEC: M930	WR	3095	1252	1252	1252	0	0	0	0	0	1252
Pine Bluff Arsenal	WR	3Q95	576	576	276	124	0	0	0	0	700
Crane Army Depot	WR C/FD	3Q95 3Q95	898	898	868	0 0	0 0	0 0	o ċ	0 0	898
Martin Marietta	C/FP	3095	233	233	233	0	0	0	0	0	233
Chamberlain Mfg	SS/FP	3Q96	332	332	0	332	0	0	0	0	332
Ferrulmatic: NJ ARMTEC	C/FP SS/FP	3095 3096	560 116	560 116	560 0	0 116	0 0	0 0	00	00	560
Coacella,CA		,									
Project D613				Page	Page 12 of 24 Pages	ges		Exh	Exhibit R-3 (PE 0604802A)	0604802A)	
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RD	RDT&E PROGRAM ELEMENT/	RAM EL		PROJECT	COST B	BREAKDOWN	JWN (R-3)	3)	DATE Fe	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	g and Manu	facturing l	Development		PE NUMBER AND TIT 0604802A We Development	PE NUMBER AND TITLE 0604802A Weapo Development	PE NUMBER AND TITLE 0604802A Weapons and Munitions Development	Iunitions ·	- Engineering	_	PROJECT D613
Contractor or Government	Contract Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
	Vehicle	Date	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
ARDEC: (IMBC)	WR	1095	1908	1908	1908	0	0 0	0	0		1908
Support and Management Organizations	WK gement Organiz	IQUU zations	13136	13130	0	0	0	0	0	13156	13136
PM Mortars	Allot	1094	1286	1286	804	482	0	0	0	0	1286
ARDEC	WR	1094	3100	3100	3100	0	0	0	0	0	3100
CECOM	WR	1094	9/	92	92	0	0	0	0	0	92
Camber Corp., NJ	SS/FP	3094	413	413	413	0	0	0	0	0	413
SET: TN	SS/SP	3Q94	120	120	120	0	0	0	0	0	120
PM Mtrs: IMBC	Allot	1095	119	119	119	0	0	0	0	0	119
ARDEC	WR	1Q95	63	63	63	0	0	0	0	0	63
ACALA	WR	1Q95	135	135	135	0	0	0	0	0	135
ARDEC: M931	WR	3Q95	3041	3041	3041	0	0	0	0	0	3041
ARDEC: (MFCS)	WR	1000	6765	6765	0	0	0	0	0	6765	6765
Test and Evaluation Organizations	n Organizations										
TECOM, WSMR,	WR	2Q95	130	130	130	0	0	0	0	0	130
NM											
CSTA: APG	WR	2Q95	140	140	140	0	0	0	0	0	140
WSMR: IMBC	WR	2Q95	153	153	153	0	0	0	0	0	153
WSMR: (MFCS)	WR	1000	4270	4270	0	0	0	0	0	4270	4270
TEXCOM Fld Spt	WR	4095	8	∞	∞	0	0	0	0	0	8
Acty, Ft. Hood	9	3007	000	too	0	000	d	c	ć	c	0
(M931)	4 ≽	4637	106	707	00/	177	0	>	>	>	/0/
AMSAA: APG	WR	3095	75	75	75	0	0	0	0	0	75
WES: Vicksburg,	WR	4095	40	40	40	0	0	0	0	0	40
MS											
Project D613				Pag	Page 13 of 24 Pages	ges		Exh	Exhibit R-3 (PE 0604802A)	0604802A)	
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RDT&E PROGRAM ELEMENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	OWN (R-	3)	DATE Fe	February 1997	16
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	ons and M	lunitions -	Engineel		РRОЈЕСТ D613
Government Furnished Property: None						
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1996 10806 2059 7871 1306 227 19983 2768	FY 1997	FY 1998	FY 1999	Budget to Complete 13156 6765 4270 24191	Total <u>Program</u> 26021 15118 5803 46942
	Date 14 of 24 Dates		<u> </u>	Exhihit D 2 (DE 0604000)	000000000000000000000000000000000000000	
rioject D013	18e 14 of 24 rages		EXI	10 N-2 (PE	0004002A)	74
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (R	?-2 Exhi	bit)		DATE Fel	February 1997	760
BUDGET ACTIVITY 5 - Engineerin	вирдет Астіvіту 5 - Engineering and Manufacturing Development	evelopm	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	ттге Veapons nt	and Mun	itions - E	ngineeri		РRОЈЕСТ D695
0	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D695 XM982		0	0	655	5901	10729	16169	0	0	0	33454
A. Mission Descript burn and rocket assis inventory. The XM9 XM982 with the Mocthreats and faster defe	A. Mission Description and Justification: The XM982 is an extended range Dual Purpose Improved Conventional Munition (DPICM) projectile which combines base burn and rocket assisted technologies in an extended range 155mm artillery projectile. It will be compatible with all current and future 155mm artillery systems in the U. S. inventory. The XM982 will extend the range of the M198, M109A5, 155mm Paladin (M109A6), and the Light Weight Howitzer to approximately 37 kilometers. The XM982 with the Modular Artillery Charge System (MACS) extends the Crusader range to 47 kilometers. Survivability is increased by allowing greater stand-off from threats and faster defeat of potential threats.	4982 is an e: range 155m M198, M109 MACS) exte	xtended rang m artillery p A5, 155mm nds the Crus	ge Dual Purp rrojectile. It 1 Paladin (M ader range t	oose Improve will be com 109A6), and o 47 kilomet	ed Conventic patible with a the Light W ers. Surviva	nal Munitio all current a eight Howit bility is incr	i (DPICM) p d future 155 zer to appro aased by alld	orojectile whomm artiller. Sima artiller. Kimately 37.	ich combine y systems in kilometers. rr stand-off f	s base the U. S. The rom
Acquisition Strategy Development Test ha TECOM Proving Gro	Acquisition Strategy: Engineering and Manufacturing Development (EMD) will consist of a system contract to design, test and manufacture hardware and then produce Development Test hardware for Government Test and Evaluation. Development Testing, consisting of safety tests and firing table tests, will be accomplished by TECOM at TECOM Proving Grounds during EMD. Production will be performed by the EMD contractor. The EMD contract will include unpriced options.	ing Develop d Evaluatior will be perf	ment (EMD) 1. Developm ormed by the) will consist nent Testing, e EMD conti	t of a system, consisting cractor. The l	contract to or safety tests EMD contract	lesign, test a s and firing t ct will incluc	nd manufact able tests, w e unpriced c	ure hardwar ill be accom options.	e and then p plished by T	roduce ECOM at
FY 1996 Accomplis	FY 1996 Accomplishments: Project not funded in FY 96	FY 96									
FY 1997 Planned Pa	FY 1997 Planned Program: Project not funded in FY 97	FY 97									
FY 1998 Planned Program: • 545 Govern • 110 Prograr Total 655	rogram: Government support for engineering: Integrated Product Team (IPT), contract solicitation, engineering support for development testing. Program management: technical evaluation; program execution	ıeering: Inte cal evaluatic	grated Produ ın; program	ıct Team (IP execution	T), contract	solicitation,	engineering	support for (developmen	t testing.	
FY 1999 Planned Program:	rogram: Government support for engineering: Integrated Product Team (IPT), contract solicitation, engineering support for development testing. Contracts for propellants, fuzing and metal parts Program management Test and evaluation	eering: Inte	grated Produ I parts	uct Team (IP	T), contract	solicitation,	engineering	support for o	development	t testing.	

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Project D695

Exhibit R-2 (PE 0604802A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUSTIFICATI	ON SHEET	(R-2 Exhi	bit)		DATE Febr	February 1997	76
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopment	PE NUMBER AND TITLE 0604802A Weak Development	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	and Muni	itions - E	ngineerin		РКОЈЕСТ D695
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 0 0 0	FY 1997 0 0 0	FY 1998 0	FY 1999 0 5901	99 0 11			
Change Summary Explanation: Funding: FY 1998: This program is a new start in EMD as it transitions from the technology base.	: This program is a new sta	urt in EMD as it tra	ınsitions from th	e technology	base.			
C. Other Program Funding Summary Procurement, Ammunition, Army, SSN E80100 Proj, Arty, 155mm XM982	FY 1996 FY 1997 0 0	FY 1998 FY 1999 0	999 FY 2000 0 0	FY 2001	FX 2002 16753	FY 2003 24979	To Compl Cont	Total Cost Cont
D. Schedule Profile	Y 1996	Y 199		Y 199		FY	FY 1999	
Milestone II Award initial EMD contract Milestone III: 4Q FY 2002	2 E	5	4	7 ×	ی 4	- ×	v)	4
Project D695	F	Page 16 of 24 Pages	Si		Exhibit	Exhibit R-2 (PE 0604802A)	4802A)	
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RDT&E PROGRAM ELEMENT/PROJECT		COST BREAKDOWN (R-3)	OWN (R-	3)	DATE Fe	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUME 06048 Devel	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	ons and N	lunitions -	Enginee		РРОЈЕСТ D695
A. Project Cost Breakdown Contractor Engineering Support Government Engineering Support Program Management Support Developmental Test and Evaluation Total	EY 1996 0 0 0 0	FY 1997 0 0 0 0	FY 1998 0 545 110 0 655	FY 1999 4081 1390 110 320 5901			
B. Budget Acquisition History and Planning Information							
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations	Project Total Office Prior to EAC FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
TBD C/CPIF 1Q99 TBD	TBD 0	0	0		4081	16816	20897
Support and Management Organizations ARDEC-Picatinny PM SADARM Test and Evaluation Organizations	0	0	0	545 110	960	4002 390	5507 610
TECOM	0	0	0	0	750	2690	6440
Government Furnished Property: None							
Subtotal Product Development Subtotal Support and Management				929	4081	16816 4392	20897
Subtotal Test and Evaluation Total Project				655	750 5901	26898 26898	6440 33454
Project D695	Page 17 of 24 Pages	^o ages		Exhib	Exhibit R-3 (PE 0604802A)	0604802A)	
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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA.	TION SI	TIFICATION SHEET (R-2 Exhibit)	R-2 Exhi	bit)		DATE Fet	February 1997	160
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Jevelop m	ent	PE N 06(Dev	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	ппсе Veapons nt	and Mur	itions - E	Ingineeri		РРОЈЕСТ D712
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D712 Non-Lethal Programs	0	3215	0	0	0	0	0	0	0	3215

potential to provide the foundation for regional and peacekeeping operations to be successful, and may allow military forces to respond to such conflicts through the use of A. Mission Description and Justification: This program will demonstrate the application of non-lethal technologies, devices and munitions that are explicitly designed an established Graduated Response Matrix. The application of non-lethal capabilities that minimizes collateral damage while providing for safe employment and mission and employed to incapacitate personnel and/or materiel while minimizing fatalities and undesired damage to property and the environment. Non-lethal devices have the accomplishment will enhance operational effectiveness. Acquisition Strategy: Upon completion of user demonstration and feedback, selected non-lethal devices/munitions will be integrated into the appropriate acquisition phase depending on their design maturity and ability to fulfill the user's needs.

FY 1996 Accomplishments: No FY 1996 program

FY 1997 Planned Program:

- Acoustics: Initiate integration of initial health hazard assessment into acoustic source design configuration and propagation measurement, for demonstration tests and potential weapon /platform applications
- Kinetics: Initial validation test of health hazard (target) assessment model (HHTAM) for blunt impact munitions. Functional purchase description development for urgent release items. Safety test and evaluation of kinetic systems in support of dismounted battlespace battle lab's warfighting 069
 - experiments
- Entanglements: Conduct safety and performance testing of gun-fired 40mm ballistically deployed entanglement munition with integrated fuze Vehicle stopper: Complete commercial off-the-shelf (COTS) electric discharge vehicle stopper performance evaluation
 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs
- Total

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program: Project not funded in FY 99

Project D712

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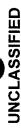
Exhibit R-2 (PE 0604802A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	IFICATIO	N SHEET (R-2 Exhi	bit)	DATE Februa	February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ηt	PE NUMBER AND TITLE 0604802A Weal Development	ਹ ਸπ∟E Weapons ₃nt	and Munition	PENUMBER AND TITLE O604802A Weapons and Munitions - Engineering Development	РКОЈЕСТ D712
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	EY 1996 0 0 0 0	FY 1997 3284 3215 0 3215	FY 1998 1064	FY 1999 0		
Change summary explanation: Funding - FY 1998 (-1064) funds transferred to the Marine Corps, executive agent for non-lethal warfare. Marine Corps will continue the R&D effort. C. Other Program Funding Summary: Not applicable.	ransferred to the	e Marine Corps, (executive agen	t for non-lethal wa	fare. Marine Corps wil	I continue the
D. Schedule Profile FY 1996	4	FY 1997	4	FY 1998	FY 1999	3 4
•		X X X A Pases	× ×		bit R-2 (PF.0)	
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	GRAM ELE	MENT/PR	OJECT (COSTB	REAKD	OWN (R-	3)	DATE F	February 1997	397
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ufacturing D	evelopment		PE NUMBER AND TIT 0604802A We Development	PE NUMBER AND TITLE 0604802A Weap Development	ons and N	PENUMBER AND TITLE O604802A Weapons and Munitions - Engineering Development	. Enginee		РКОЈЕСТ D712
A. Project Cost Breakdown Product development SBIR/STTR Management and engineering support Test and evaluation Total	ort		FY 1996 0 0 0		FY 1997 3137 78 0 0 3215	FY 1998 0 0 0	FY 1999 0 0			
B. Budget Acquisition History and Planning Information	d Planning Info	rmation								
Performing Organizations Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle Product Development Organizations ARDEC: NI	Award or Obligation Date ons	Performing Activity <u>EAC</u> 3040	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Manago	2Q97 izations: None is: None	175	175	0	0	175	0 0	0 0	0	175
Government Furnished Property: Not applicable	: Not applicable									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation						3215				3215
Total Project						3215				3215
Project D712			Page	Page 20 of 24 Pages	ges		Exhi	Exhibit R-3 (PE 0604802A)	0604802A)	
				942						Item 97





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	IS NOIL	HEET (F	R-2 Exhi	bit)		DATE Fel	February 1997	26(
вирсет АстіVITY 5 - Engineering and Manufacturing Development	Developm	ent	PE N 060 Dev	PE NUMBER AND TITLE 0604802A Weak Development	тпсе Veapons nt	and Mun	itions - I	E NUMBER AND TITLE 1604802A Weapons and Munitions - Engineering 16velopment		PROJECT DAS1
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DAS1 Small Arms Improvement	473	1566	0	0	2459	3092	3235		Continuing	6772 Continuing Continuing

that provides a common mounting interface for various fire control devices. The current rear sight lacks sufficient structural integrity to mount such devices, including night A. Mission Description and Justification: This program provides funds to develop existing and emerging technology to enhance lethality, target acquisition, fire control, Machine Gun include a Quick Change Barrel (QCB) kit, mounting surfaces, and trigger safety. Improvements to the MK19-3 GMG include a universal mounting bracket vision equipment. Funding is sufficient to complete development, testing, and modification of the MK19-3 Grenade Machine Gun technical data package (TDP) and type training effectiveness, and reliability for small arms weapon systems. Current small arms include a variety of personal defense weapons (.38 caliber, .45 caliber, 9mm), efforts focus on improvements to the MK19-3 Grenade Machine Gun (GMG) and M2 Heavy Barrel Machine Gun. Improvements to the M2 Heavy Barrel, Caliber .50 individual weapons (5.56mm-7.62mm), crew-served weapons (5.56mm-40mm) and related equipment such as fire control, training devices and ammunition. Current classification (TC) of the QCB.

package. Currently fielded systems will be modified through a MK19-3 modification effort. Several non-developmental item (NDI) solutions exist for the caliber .50 QCB. Acquisition Strategy: The universal mounting bracket will enter production as an engineering change to the current MK19-3 Grenade Machine Gun technical data The strategy will employ full and open competition, production qualification and operational testing leading to TC standard.

FY 1996 Planned Program:

- 101 Drafted performance specifications50 Purchased commercial hardware
 - 237 Performed validation testing
- 85 Finalized performance specifications
- otal 4

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Project DAS1

Exhibit R-2 (PE 0604802A)

RDT&E BUDGET ITEM JUSTIFICATION	IIFICATION SHEET (R-2 Exhibit)	R-2 Exhibi	t	DATE Feb	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604802A Weap Development	ттге Weapons ai nt	nd Munitic	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development		PROJECT DAS1
FY 1997 Planned Program: 8 Solicit competitive hardware 588 Conduct technical evaluation 157 Award hardware contract 362 Production qualification 185 Operational test 150 Type classification 38 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs Total 1566	nology Transfer (SI	31R/STTR) Prog	rams			
FY 1998 Planned Program: Project not funded in FY 98						
FY 1999 Planned Program: Project not funded in FY 99						
B. Project Change SummaryFY 1996FY 1997 President's Budget486Appropriated Value500Adjustments to Appropriated Value-27FY 1998 Pres Bud Request473	FY 1997 0 1566 0 1566	FY 1998 0 0	FY 1999 0			
Summary Change Explanation: Funding - FY 97 (+1566) Congressional increase to support MK 19 modifications. C. Other Program Funding Summary: Not applicable.	e to support MK 19	modifications.				
D. Schedule Profile FY 1996	FY 1997 2 3	4	FY 1998	1 6	FY 1999	4
1	,,,,	· ×		-		r
Project DAS1	Page 22 of 24 Pages			Exhibit R-2 (PE 0604802A)	304802A)	
	944					Item 97

944 UNCLASIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	PROJECT S - Engineering DAS1
D. Schedule Profile FY 1996	-	FY 1999
'n	2 X	X X
* Milestone completed		
Project DAS1	Page 23 of 24 Pages	Evhihit R-2 (DE OROV8024)
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RD	RDT&E PROGRAM ELEMENT/	SRAM EL	EMENT/PR	PROJECT COST BREAKDOWN (R-3)	SOST BE	REAKDO	OWN (R-	3)	DATE Fe	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	g and Manu	facturing [Development		PE NUMBER AND TITLE 0604802A Weal Development	AND TITLE A Weaponent	ons and M	PE NUMBER AND TITLE 0604802A Weapons and Munitions - Engineering Development	Engineer		PROJECT DAS1
A. Project Cost Breakdown Other government support	cakdown upport			FY 1996 423	EY 1997 1300	1 <u>997</u> 1300	FY 1998 0	FY 1999 0			
SBIR/STTR Program management support Total	nt support			50 473		38 228 1566	0	0			
B. Budget Acquisition History and Planning Information Performing Organizations	<u>tion History and</u> izations	l Planning Inf	ormation								
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to <u>Complete</u>	Total Program
Product Development Organizations ARDEC MIPR	ent Organizatio MIPR	i ns 2Q97	731	731	0	363	731	0	0	CONT	1094
Support and Management Organizations PM, Small Arms MIPR Multi ACALA MIPR 3Q97 SBIR/STTR	igement Organi MIPR MIPR	zations Multiple 3Q97	228 45	22 8 45	0 0	50	198 37 38	0 0	0	CONT	248 47 38
Test and Evaluation Organizations Aberdeen Test MIPR	n Organizations MIPR	s 3Q97	390	390	0	50	390	0	0	CONT	440
Center TEXCOM Contractor	MIPR FFP	1Q98 1Q98	100	100	0	0 0	100	0	0	CONT	100
Government Furnished Property: None	ished Property:	None									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	evelopment d Management					473	1566				2039
Total Project	Valuation					473	. 1566				2039
Project DAS1				Page	Page 24 of 24 Pages	es		Exh	Exhibit R-3 (PE 0604802A)	0604802A)	
					946						Item 97



	RDT&E BUDGET ITEM JUS	EM JUS	4.0	TION SI	TIFICATION SHEET (R-2 Exhibit)	2-2 Exhi	bit)		DATE Fe	February 19	1997
80D(вирбет Астіvітү 5 - Engineering and Manufacturing Developm	evelopm	ent	PE NI 060 Enç	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	TITLE .ogistics Develop	& Engine	er Equir	pment -		
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	19132	19903	28039	26932	24393	16598	28730	31681	Continuing	Continuing
DH01	Combat Engineer Equipment Engineering Development	9901	9433	8566	7617	2621	1053	1551	11652	Continuing	Continuing
DH02	2 Bridge Site Mobility	0	0	0	0	0	0	5077	0	0	5100
DH14	4 Logistics Support Equipment Engineering Development	629	98	4829	100	105	102	103	101	Continuing	Continuing
DL39	General Support Equipment Engineering Development	1319	1641	2286	2589	2247	2187	4688	4238	Continuing	Continuing
DL41	Fuels and Equipment Engineering Development	1135	1011	1071	1081	1057	1052	1306	1314	Continuing	Confinuing
DL42	Camouflage System Engineering Development	734	942	968	843	405	397	345	361	Continuing	Continuing
DL43	Engineering Development	0	0	0	1114	2802	2499	4335	2830	Continuing	Continuing
DL44	Distribution System, 105kW	0	0	0	0	0	0	805	0	0	800
D194	Engine Driven Generators Engineering Development	1423	2183	7534	9015	8184	5290	2244	1417	Continuing	Continuing
D279	Airdrop Equipment Engineering Development	1416	1414	1359	1354	1380	1371	4864	4701	Continuing	Continuing
D429	Rigid Wall Shelter Engineering Development	2296	3193	1498	1024	1159	1152	2157	2166	Continuing	Continuing
D461	Marine Oriented Logistics Equipment Engineering Development	329	0	0	2195	4433	1495	1255	2901	Continuing	Continuing
				Page 1 of 43 Pages	3 Pages			Exhibit	Exhibit R-2 (PF 0604804A)	604804A)	
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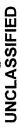
	PE NUMBER AND TITLE
5 - Engineering and Manufacturing Development Ei	0604804A Logistics & Engineer Equipment Engineering Development

Mission Description and Budget Item Justification: This Program Element (PE) supports engineering and manufacturing development (EMD) of new and advanced combat support and combat service support equipment and therefore belongs in Budget Activity 5.

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Exhibit R-2 (PE 0604804A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	ا-2 Exhi	bit)		DATE Fel	February 1997	97
вирсет астіліту 5 - Engineering and Manufacturing Developm	Developm	ent	PE NI 060 En	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment - Engineering Development	тт <u>ге</u> .ogistics j Develop	& Engine oment	er Equip	ment -]	PROJECT DH01
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DH01 Combat Engineer Equipment Engineering Development	9901	9433	8566	7617	2621	1053	1551	11652	1652 Continuing Continuing	Continuing

A. Mission Description and Budget Item: This project supports the development and transition to procurement of military tactical bridging for wet and dry gap bridging in support of the increased military load class (MLC) requirements for the Abrams tank. This project also provides for the non-developmental item (NDI) acquisition of the requirements such as the Common Bridge Transporter (CBT), the Improved Ribbon Bridge (IRB) Bays, and the Heavy Dry Support Bridge (HDSB). All bridging work is Deployable Universal Combat Earthmover (DEUCE) and market investigations of other engineer construction equipment.

Acquisition Strategy: CBT - Competitive RDTE followed by downselect for procurement. HDSB - Competitive RDTE followed by downselect for procurement. DEUCE - Competitive procurement of integrated NDI

FY 1996 Accomplishments:

Awarded two HDSB Engineering Manufacturing Development (EMD) contracts Conducted market investigation for construction equipment Completed preproduction qualification test for DEUCE Completed Logistics Development for the DEUCE Initiated IRB technical and configuration baseline Conducted Milestone II Review for HDSB Conducted Milestone III IPR for DEUCE Conducted Source Selection for HDSB Developed armored DEUCE Cab Conducted Milestone III for CBT 7446 190 400 674 9901 41 Total

FY 1997 Planned Program:

- Fabricate HDSB EMD prototypes 7539
- Prepare for Contractor Testing of HDSB EMD prototype 274
 - Prepare for award of IRB bays RDTE contract 274 1024
- Initiate development and upgrade of IRB bays

Project DH01

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (F	R-2 Exhibi	t) DATE	February 1997	
BUDGET ACTIVITY 5 - Engineerin	вирсет Астіvity 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	тть Logistics & y Developm	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment - Engineering Development		PROJECT DH01
FY 1997 Planned • 92 • 230 Total 9433	Program: (continued) Conduct market investigation for constructi Small Business Innovation Research/Small	on equipment Business Technology Transfer (SBIR/STTR) Program	IR/STTR) Progi	am		
FY 1998 Planned Program: • 6471 Continu • 541 Prepare • 655 Contrac • 317 Fabrica • 215 Prepare • 367 Conduc Total 8566	rogram: Continue fabrication of HDSB prototypes Prepare for contractor testing of the HDSB Contractor testing of Bridge prototypes for the HDSB Fabricate IRB prototypes Prepare for testing of IRB prototypes Conduct market investigation for construction equipment					
FY 1999 Planned Program: 2094 Continu 923 Continu 3206 Initiate 1026 Test IR 368 Conduc Total 7617	rogram: Continue fabrication of HDSB Launcher prototypes Continue contractor testing of Bridge prototypes for the HDSB Initiate pre-production qualification test for HDSB Test IRB prototypes Conduct market investigation for construction equipment	SSB				
B. Project Change Summary FY 1997 President's Budget Appropriated Value	Summary FY 1996 Budget 9425 9425 9691	FY 1997 9635 9433	FY 1998 7737	<u>FY 1999</u> 4614		
FY 1998 Pres Bud Request Change Summary Explanation:		9433	8566	7617		
Funding: FY FY	Funding: FY 1998 funding was increased (+829k) due to expected higher HDSB fabrication costs. FY 1999 funding was increased (+3003k) due to the requirement for a pre-production qualification test for the HDSB.	· HDSB fabrication nt for a pre-product	costs. ion qualification	test for the HDSB.		
Project DH01	Pag	Page 4 of 43 Pages		Exhibit R-2 (Exhibit R-2 (PE 0604804A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	LIFICAT	ION SF	IEET (R	-2 Exhit) Eti		DATE Fet	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Developme	lent	PE NU 060 Eng	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	пле ogistics Develop	& Engin€ ment	er Equip	oment -		PROJECT DH01
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Compl	Total Cost
RDTE, 0603804.DG01, Combat Engineer							940	1415	Cont	Cont
Equipment, Advanced Development OPA3, G82400, Heavy Dry Support Bridge							944	1415	Cont	Cont
OPA3, M26800, Bridge, Float-Ribbon,	3709	4296	4200	4303	4315	4321	9239	9554	Cont	Cont
Transporter OPA3, M26600, Bridge, Float-Ribbon, Interior					3143	3735	8332	12820	Cont	Cont
Bays						Č	0	i		(
OPA3, M26/00, Bridge, Float-Kibbon, Kamp					1340	7174	7381	5006	Cont	Cont
Days OPA3, M06105, Deployable Universal Combat	9522	7701	8885	9208	9342	7410	10317	9376	Cont	Cont
Earthmover										
OPA3, GA1100, Line of Communications Bridge							5681	1796	Cont	Cont
OPA3, M2/200 Float Bridge Propulsion OPA3, GA1200 Bridge Site Mobility							2083	4770	Cont	Cont
OPA3, Various Construction Equipment Items	21329	67249	24682	65422	71921	77645	67138	83148	Cont	Cont
D. Schedule Profile	FY 1	1996	-	FY 1997	-	FY 1998	866	-	FY 1999	-
Conduct POT for DEUCE	¬ *×		1	o 7	†	7		-	°	†
Conduct Milestone III IPR for DEUCE		*×								
Conduct Milestone II Review for HDSB		*								
Award HDSB EMD contract		*		;						
Fabricate HDSB EMD Prototypes				×	Þ	•				
Conduct Milestone III Review for CB1				*	*X	€ _				
Kelease Kequest for Froposal for IKB Bays Award IRB bays contract				< >						
Upgrade IRB Prototypes				×						
Conduct PPQT for IRB							×			
Conduct Construction Equipment Market		*			×		×			×
Investigation										
*Milestone completed										
Project DH01		7	Page 5 of 43 Pages	3 Pages			Exhibi	Exhibit R-2 (PE 0604804A)	304804A)	
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RDT&E PR	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	EMENT/PR	OJECT (SOST B	REAKD(OWN (R-	3)	DATE Fe	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	anufacturing l	Development		PE NUMBER 060480 Engine	PE NUMBER AND TITLE 0604804A Logis Engineering Dev	re number and TITLE 0604804A Logistics & Eng Engineering Development	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	ipment -		PROJECT DH01
A. Project Cost Breakdown			FY 1996	Ē	FY 1997	FY 1998	FY 1999			
DH01 DEUCE & Construction Equipment	n Equipment					•				
Program Management Support	ند		41							
Integrated Logistics Support (ILS)	ILS)		279							
Prototype Hardware Development	nent		119							
Developmental and Operational Testing	al Testing		999							
Construction Equip Market Investigations	vestigations		72		92	368	366			
Miscellaneous			8						٠	
DH01 BRIDGING (HDSB, CBT & IRB)	BT & IRB)									
Primary Hardware Development	ınt		7000		8563	9829	2097			
Developmental Test and Evaluation	nation		210		50	728	4138			
Program Management Support (three programs)	t (three programs)		1506		498	638	864			
Miscellaneous						46	152			
SBIR/STTR					230					
Total			9901		9433	8566	7617			
B. Budget Acquisition History and Planning Information	y and Planning Inf	ormation								
Performing Organizations										
Contractor or Contract										
+	be	Performing	Project	Total						
ing		Activity	Office	Prior to					Budget to	Total
Activity Vehicle	<u>Date</u>	EAC	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
Caterpillar, Inc. FFP	Jul 95	2776	2776	2776	119					2895
Williams Fairley C-CPFF	Aug 96	24684			7000	7539	7126	3019	Cont	24684
Eng Ltd/	l									
Karlskronavarvet										•
Contractor TBD C-CPFF	Mar 97					1024	315		0	1339
TARDEC				2447	72	92	368	366	Cont	3345
Support and Management Organizations None	ganizations None									
Project DH01			Page	Page 6 of 43 Pages	sə		Exhi	Exhibit R-3 (PE 0604804A)	0604804A)	
				952					!	Item 98
				726						



RDT&E PROGRAM ELEMENT/	JGRAM EL	EMENT/PR	OJECT	COSTB	REAKDO	PROJECT COST BREAKDOWN (R-3)	3)	DATE F	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	nufacturing	Development		PE NUMBER AND TITLE 0604804A Logis Engineering Dev	AND TITLE IA Logistering Deve	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	ineer Equ	ipment -		PROJECT DH01
Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle	pe Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
TECOM 1095	lons Various			632	876	50	73	3216	Cont	4847
Miscellaneous TACOM 1095 SBIR/STTR	Various			638	1834	498 230	684	1016	Cont	4670 230
Subtotal Product Development	,			5223	7191	8655	7809	3385		32263
Subtotal Test and Evaluation Miscellaneous Total Project	.			634 638 6493	876 1834 9901	50 728 9433	73 684 8566	3216 1016 7617	Cont	Cont Cont 41823
	•									
Project DH01			Pag	Page 7 of 43 Pages	es		Exh	Exhibit R-3 (PE 0604804A)	0604804A)	
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	FION SI	HEET (F	-2 Exhi	bit)		DATE Fet	February 1997	266
BUDGET ACTIVITY 5 - Engineering	вироет Астіvітץ 5 - Engineering and Manufacturing Development	evelopm	ent	PE NI 060 En	PE NUMBER AND TITLE 0604804A Logis Engineering Dev	PENUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment - Engineering Development	er Equip	oment -	_	PROJECT DH14
U	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DH14 Logistics Suppo Development	Logistics Support Equipment Engineering Development	579	86	4829	100	105	102	103	101	Continuing	Continuing
A. Mission Descripti	A. Mission Description and Justification: Develo	Develops and transiti	itions to pro	curement a	series of Ma	ons to procurement a series of Material Handling		Equipment (MHE) items.	items.	:	
Acquisition Strategy: Product Improvements	Acquisition Strategy: All Terrain Lifter Articulated System (ATLAS) - Competitive procurement of integrated NDI. Cargo Container Retriever (CCR) - Pre-Planned Product Improvements (P3I) to ATLAS. MHE - Competitive procurements for miscellaneous MHE.	ted System ompetitive pa	(ATLAS) - (courements	Sompetitive for miscella	procuremen	t of integrate	d NDI. Carş	go Containe	r Retriever ((CCR) - Pre-	Janned
FY 1996 Accomplishments:	shments: Completed preproduction qualification testir Completed ATLAS logistics development Conducted market investigations for MHE.	lification tes levelopment ons for MHI	ting of the ATLAS	TLAS							
FY 1997 Planned Program: • 25 Conduc	rogram: Conduct market investigations for the Container Cargo Retriever Conduct market investigations for warehouse MHE	for the Con for warehou	tainer Cargo ıse MHE	Retriever							
• 34 • 2 Total 86	Conduct market investigations for other general MHE Small Business Innovation Research/Small Business T	s for other gosearch/Smal	neral MHE l Business T	schnology 1	Fransfer (SB	eral MHE Business Technology Transfer (SBIR/STTR) Program	ogram				
FY 1998 Planned Program:	rogram: Conduct Market investigations for Light Weight Container Handling Equipment. Provide engineering support for development of technical data package (TDP) for Rough Terrain Container Handler (RTCH). Provide test support for development of TDP for RTCH.	s for Light V or developm opment of T	/eight Conta ent of techni OP for RTCF	iner Handlii cal data pac I.	ng Equipmer kage (TDP)	ıt. for Rough T	errain Conta	iner Handle	r (RTCH).		,
• 50 • 50	Procure test nardware/sortware for development of LDF for KLCh. Prepare for award of FY 99 production contract for Rough Terrain Container Crane (RTCC). Conduct Milestone III IPR for RTCC.	e for develor coduction cor RTCC.	oment of 110 rtract for Ro	r for Kilch ugh Terrain	1. I Container C	rane (RTCC	ć				
• 172 Total 4829	Using best value approach, conduct paper downselect for KTCC.	nduct paper	downselect 1	or KICC.							
Project DH14				Page 8 of 43 Pages	43 Pages			Exhibi	Exhibit R-2 (PE 0604804A)	604804A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUST	FICATI	ION SHI	EET (R-	2 Exhit	oit)		DATE Fet	February 1997	26
вирсет астіvіту 5 - Engineering and Manufacturing Developm	lopment	<u>.</u>	PE NUN 0604 Engi	PE NUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	⊓∟E ogistics Develop	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	er Equip	ment -	E O	PROJECT DH14
 FY 1999 Planned Program: 30 Development of performance specifications for MHE. 30 Conduct market investigations for warehouse MHE. 40 Conduct market investigations for other general MHE. Total 	ifications f warehouse other gene	or MHE. MHE, ral MHE.								
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value		FY 1996 1324 1362 -783	FY 1997 88 86		FY 1998 88 4820	FY 1999 88	88			
Change Summary Explanation: Change Summary Explanation: Funding: FY 1996 funding decreased (-713) due to changed Type Classification (TC) strategy for the ATLAS and funds were reprogrammed to other RDTE projects requiring additional RDTE funding and (-32) for undistributed Congressional reductions and rescissions. FY 1998 funding was increased (+4741) to allow RDTE efforts for the RTCH and the RTCC.	e to change ding and (ed Type Cla (-32) for un RDTE effe	assification (distributed C orts for the R	TC) strategy Congressions	for the AT reduction	LAS and fus and resciss	nds were re-	programmed	to other RD	TE
C. Other Program Funding Summary EX PDTE 0603804 DG14 I poistics Support	FY 1996 F	FY 1997 86	FY 1998 96	FY 1999 98	FY 2000	FY 2001 101	$\frac{\text{FY } 2002}{103}$	FY 2003 100	To <u>Compl</u> Cont	Total Cost Cont
ılating	13640	15941	3554	10498	10505	10510	19930	23851	Cont	Cont
System OPA3, MA8600, Items Less Than \$2.0M (MHE) OPA3, M41200, Forklift, DE, PT, RT, 50,000 lbs OPA3, X00900, Rough Terrain Container Crane	27543 10587	2664	1724	1715 24396 13844	1854 35774 11433	1843 50181 8813	1984	1988 16894	Cont	Cont Cont 34090
ile 1 (ATLAS) > cation Test (PQT) >	FY 1996 2 3 {* {*	4	FY 1	FY 1997 2 3	4	FY 1998 2 3	% £	_	FY 1999 2 3	4
Initiated (ATLAS) Project DH14			Page 9 of 43 Pages	Pages			Exhib	Exhibit R-2 (PE 0604804A)	604804A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	T ITEM JUSTII	FICATI	ON SHEET	(R-2 E)	xhibit)			DATE	February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ing Development		PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment -	Logist	ics & E	ingine	er Equi	pment		PROJECT DH14
D. Schedule Profile	FY 1996		FY 1997	, -	. .	661			V 199	
Type Classification Generic (ATLAS) 1st Production Quality call up (ATLAS) Conduct Market Investigations for MHE Award Prototype Contract for RTCH Conduct RTCH PQT Prepare/Conduct Milestone III IPR for RTCC Prepare RFP for Prod. Contract for RTCC Conduct Sole Source Evaluation Board Paper Downselect for RTCC Conduct Market Investigation for Light Weight Container Handler Develop performance specifications for MHE Conduct market investigations for warehouse MHE Conduct market investigations for other general MHE		****		× ×	- ×		* * * * *	-	n N	* × × ×
*Milestone completed .		Pa	Page 10 of 43 Pages				Exhib	It R-2 (PE	Exhibit R-2 (PE 0604804A)	
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RDT&E		PROGRAM ELEMENT		PROJECT (SOST B	REAKDO	COST BREAKDOWN (R-3)	3)	DATE FE	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ind Manu	facturing l	Development	**	PE NUMBER AND TITLE 0604804A Logis Engineering Dev	AND TITLE TA Logis:	PE NUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	PE NUMBER AND TITLE OGO 18 Engineer Equipment Engineering Development	ipment -	. 1	PROJECT DH14
A. Project Cost Breakdown Government Engineering and Other Support Primary Hardware Development Developmental Test and Evaluation Program Management Support Miscellaneous	down g and Other slopment Evaluation upport	Support	·	FY 1996 100 . 350 50 79		FY 1997	FY 1998 300 3000 1000 450 79	FY 1999			
Total B. Budget Acquisition History and Planning Information	History and	Planning Inf	<u>ormation</u>	579		⁷ 98	4829	100			
Performing Organizations Contractor or Contract Government Method/Type / Performing or Funding (Activity Vehicle I Product Development Organizations	ations Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
TRAC CF International RTCH Contractors CF	CPFF	May 95 Dec 97	1541	1541	1541			3000			3000
Support and Management Organizations: None Test and Evaluation Organizations: None Miscellaneous: TARDEC MIPR Various PM CE/MHE PO Various TECOM MIPR Various SBIR/STTR	ement Organiz Organizations MIPR PO MIPR	cations: None Narious Various Various Various			1270 388 670	100 129 350	84 2	300 450 1000	100	Cont Cont Cont	Cont
Government Furnished Property: None Project DH14	l Property :	None		Раве	Page 11 of 43 Pages	ક્ટર		Exhi	Exhibit R-3 (PE 0604804A)	0604804A)	
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BI	REAKDO	WN (R-3	€	DATE Fe	February 1997	260
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604804A Logis Engineering Dev	PE NUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	ineer Equ	ipment -	1	PROJECT DH14
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Miscellaneous	Total Prior to <u>FY 1996</u> 1541 2328	FY 1996 579	FY 1997	FY 1998 3000 1829	FY 1999	Budget to Complete Cont Cont Cont	Total Program Cont Cont Cont Cont
	3869		∞	4829	100	Cont	Cont
Project DH14	Page 12 of 43 Pages 958	ses		Exh	Exhibit R-3 (PE 0604804A)	0604804A)	Item 98

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	-2 Exhi	bit)		DATE Fet	February 1997	760
BUDGET ACTIVITY 5 - Engineering	BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NI 060 Enç	PE NUMBER AND TITLE 0604804A Logistics & Enç Engineering Development	ritle ogistics Develop	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	er Equip	ment -		PROJECT DL39
Ŏ	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DL39 General Suppor Development	General Support Equipment Engineering Development	1319	1641	2286	2589	2247	2187	4688	4238	Continuing	Continuing
A. Mission Descrip (ECU) that do not us	A. Mission Description and Justification: Develop and transition to procurement water purification equipment, maintenance equipment and environmental control units (ECU) that do not use ozone depleting refrigerants.	p and transil	ion to procu	rement wate	r purification	n equipment	, maintenanc	e equipmen	t and enviror	ımental con	rol units
Acquisition Strateg	Acquisition Strategy: Development and transition to competitive procurement for all items under this project.	to competitiv	ve procurem	ent for all ite	ems under th	is project.					
FY 1996 Accomplishments:	hments: Conducted tests on 36K British Thermal Units per Hour (BTUH) Environmental Control Units (ECU) prototypes. Conducted Milestone I/II in process review for 1500 gallons per hour (GPH) Reverse Osmosis Water Purification Unit (ROWPU). Completed trade off analysis of subsystems for 1500 GPH ROWPU. Designed and fabricated integrated Test Bed Unit. Initiated contract package for design/fabrication of 1500 GPH ROWPU engineering and manufacturing development (EMD) prototypes.	h Thermal U rocess reviev of subsystem rated Test Bdesign/fabric	nits per Hou v for 1500 gs s for 1500 G ed Unit. eation of 150	ır (BTUH) E allons per hc iPH ROWPU 00 GPH ROV	savironment our (GPH) Ro J. APU enginee	al Control Ul	nits (ECU) p osis Water Pu nnufacturing	rototypes. rrification U developmen	nit (ROWPU t (EMD) prc	J). ototypes.	
FY 1997 Planned Program: • 164 Prepare • 470 Perform • 200 Update • 768 Award • 39 Small E Total 1641	rogram: Prepare data package for improved ECU procurement. Perform technical feasibility testing of Integrated Test Bed Unit. Update program management documentation for 1500 GPH ROWPU program. Award contract for fabrication of EMD 1500 GPH ROWPU. Small Business Innovation Research/Small Business Technology Transfer (SBI	oved ECU p esting of Inte documentati 1 of EMD 15 search/Small	rocurement. grated Test on for 1500 00 GPH RO	Bed Unit. GPH ROW/ WPU. echnology T	ocurement. grated Test Bed Unit. on for 1500 GPH ROWPU program. 0 GPH ROWPU. Business Technology Transfer (SBIR/STTR) Program	R/STTR) Pr	ogram				
FY 1998 Planned Program:	rogram: Design and fabricate EMD prototype 1500 Prepare production qualification test (PQT) Complete tests on 18K ECU prototype.	ototype 1500 on test (PQT rototype.		PU. operational 1	test and evalı	uation (IOTI	GPH ROWPU. and initial operational test and evaluation (IOTE) test plan for the 1500 GPH ROWPU.	or the 1500 o	GPH ROWP	ŭ.	
Project DL39				Page 13 of 43 Pages	43 Pages			Exhibi	Exhibit R-2 (PE 0604804A)	604804A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TIFICAT	ION SI	IEET (R	-2 Exhil	bit)		DATE Fet	February 1997	97
вирсет Астіvітץ 5 - Engineering and Manufacturing Development	ent	PE NU 060 . Eng	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	ı⊤∟E ogistics Develop	& Enginement	eer Equi	pment -		РРОЈЕСТ DL39
 FY 1999 Planned Program: 450 Complete fabrication of 1500 GPH ROWPU prototypes. 1200 Conduct PQT and IOT&E on the 1500 GPH ROWPU. 380 Update Program Management Documentation (PMD) for 1500 GPH ROWPU. 100 Develop purchase description for 18K ECU. 150 Develop purchase description for large diesel heaters (250K+ BTUH). 309 Complete testing of large heater prototypes. Total 2589 	PU prototypes TH ROWPU. Tion (PMD) fi U. Seel heaters (2 S.	i. or 1500 GP! 50K+ BTUI	H ROWPU. H).						
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 1603 1649	·	FY 1997 1677 1641	FY 1998 2136	<u>FY 1999</u> 2356	<u>1999</u> 2356			
FY 1998 Pres Bud Request	1319		1641	2286	25	2589			
Change Summary Explanation: Funding: FY 1996 funding was decreased (-246) due to reprogramming to higher Army priority RDTE projects and (-38) for undistributed Congressional reductions and rescissions.	reprogrammir	ıg to higher	Army priori	ty RDTE pr	ojects and ((-38) for unc	listributed Co	ngressional	
C. Other Program Funding Summary FY 1996	FY 1997	FV 1998	FV 1999	FV 2000	FV 2001	FV 2002	FV 2003	To	Total
RDTE; 0603804.DK39, General Support 707	851	1689	1809	1980	2103	2424	2431	Cont	Cont
OPA 3, MA7600, Items Less Than \$2.0M (Water 2584	1461 2968	1468 2862	4770 6464	4637 9098	4712 8505	1438 5654	1988 4391	Cont	Cont
Equipment) OPA 3, R05100, Water Purifier Unit Reverse Osmosis 3000 GPH			28345	28490	33283	19554	10628	Cont	Cont
OPA 3, R05200, Water Purifier Unit Reverse Osmosis 1500 GPH							5963	Cont	Cont
OPA 3, M27400, Tactical Water Distribution System				5116	5073	4365	0	Cont	Cont
Project DL39	I	Page 14 of 43 Pages	13 Pages			Exhib	Exhibit R-2 (PE 0604804A)	04804A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM	JUSTI	FICAT	NO.	SHEET	(R-2 E	xhib	 		D	DATE Fet	February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Devel	opment		<u>a</u> 0 II	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	ID TITLE Logis ng Dev	tics & elopn	Engir ent	leer E	quipm	ent -		PROJECT DL39
D. Schedule Profile	F)	FY 1996 2 3	4	1	FY 1997 2 3	4	1	FY 1998 2 3	3 3	4	щ	FY 1999 2 3	4
Conduct tests on 36K British Thermal Units per Hour (BTUH) Environmental Control Units (ECU) prototypes Conduct Milestone I/II In Process Review for 1500 GPH ROWPU Complete trade-off analysis of subsystem for 1500 GPH ROWPU Initiate contract package for design/ fabrication of 1500 GPH ROWPU EMD prototypes Award 1500 GPH ROWPU EMD prototype contract Update Program Management Documentation Initiate design and fabrication of the prototype 1500 GPH ROWPU Prepare PQT and IOT&E test plans for 1500 GPH ROWPU Complete 18K ECU tests Complete fabrication of 1500 GPH ROWPU Update PMD 1500 GPH ROWPU Develop 18K ECU purchase description Develop large diesel heater purchase	*	* *	*		×	×	×		×	×	×	**	×
*Milestone completed Project DL39			7	age I.	Page 15 of 43 Pages				ш	xhibit R	-2 (PE 06	Exhibit R-2 (PE 0604804A)	
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RE	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	SRAM ELE	EMENT/PR	OJECT	COST B	REAKDO	JWN (R-	3)	DATE F .	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ng and Manu	facturing D)evelopment		PE NUMBER AND TITLE 0604804A Logis Engineering De	AND TITLE 1A Logist Pring Dev	псе ogistics & Enç Development	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment - Engineering Development	ipment -	–	PROJECT DL39
A. Project Cost Breakdown Hardware Development	3reakdown oment			FY 1996 806		FY 1997 831	FY 1998 1325	<u>FY 1999</u> 1295			
Operational 1 est and Evaluation Development Test and Evaluation Government Engineering and Support Government Program Support Miscellaneous	nd Evaluation and Evaluation reering and Suppo am Support	tt.		86 325 50 50	10.10.00.0	450 261 60	500 331 100 30	855 265 103			
SBIR/STTR Total				1319		39 1641	2286	2589			
B. Budget Acquisition History and Planning Information	sition History and	l Planning Infe	rmation								
Performing Organizations Contractor or Contra	nizations Contract Method/Tyne	Award or	Performino	Project	Total						
Performing Activity Budden	or Funding Vehicle	Obligation Date	Activity EAC	Office EAC	Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Support and Management Organizations. None Test and Evaluation Organizations: None Missellanceur	nent Organizatio lagement Organiz ion Organizations	zations: Nones: Nones: None									-
TARDEC	In-House	Varions			970	643	350	435	510	Cont	Cont
CECOM	In-House	Various			Č	98	71	123	191	Cont	Cont
Kadian CRREL	ı ask Order MIPR	various Various			c7 75	20	700	10	25	Cont	Cont
Dugway PG	MIPR.	Various			25	30	50		10	Cont	Cont
BKTRC ARL	Iask Order MIPR	Various Various			170 25	15	100 50	50 10	150 25	Cont	Cont
ATCOM	MIPR	Various			55	15	20	10	25	Cont	Cont
Vitro Inc.	Task Order	Varions			83	36	20			Cont	Cont
USBR	MIPR	Feb 95			30					Cont	Cont
Project DL39				Pag	Page 16 of 43 Pages	ges		Exh	Exhibit R-3 (PE 0604804A)	0604804A)	
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RD.	RDT&E PROGRAM ELEMENT/	3RAM EL	EMENT/PR	PROJECT	COST BREAKDOWN (R-3)	REAKDO	OWN (R-	<u>®</u>	DATE F	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	g and Manu	ıfacturing l	Development		PE NUMBER AND TITLE 0604804A Logis Engineering Dev	AND TITLE A Logist	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	ineer Equ	ipment -	d	РRОЈЕСТ DL39
Contractor or Contract Government Method/Type Awa Performing or Funding Obli Activity Vehicle Date CECOM MIPR Vari CHIPPM MIPR Vari NFESC MIPR Vari TECOM MIPR Vari Dugway PG MIPR Vari Contractor (TBD) CPFF Dec Contractor (TBD) CPFF Vari MTMC MIPR Vari SBIR/STTR Government Furnished Property - None Subtotal Product Development Subtotal Test and Evaluation	Contract Method/Type or Funding Vehicle MIPR MIPR MIPR MIPR CPFF CPFF CPFF CPFF AIPR MIPR AIPR AIPR AIPR AIPR AIPR AIPR AIPR A	Award or Obligation Date Various Various Various Various Various Various Various	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996 12	F <u>Y 1996</u> 50 400	FY 1997 200 50 50 461	FY 1998 100 250 325 800 163	FY 1999 100 25 250 650 10 400 208	Budget to Complete Cont Cont Cont Cont Cont Cont Cont Cont	Total Program Cont Cont Cont Cont Cont Cont Cont Cont
Subtotal Miscellaneous Total Project Project DL39	sno			Pag	1555 1555 Page 17 of 43 Pages	1319 1319	1641	2286 2286 Exh	6 2589 Cont 6 2589 Cont Exhibit R-3 (PE 0604804A)	Cont Cont 0604804A)	Cont
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	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION SI	HEET (F	IIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	797
вирдет Астіvітy 5 - Engineerin	вир дет асті мту 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NI 060 Enç	PE NUMBER AND TITLE 0604804A Logi Engineering De	PE NUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	er Equip	oment -		PROJECT DL41
)	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DL41 Fuels and Equi	Fuels and Equipment Engineering Development	1135	1011	1071	1081	1057	1052	1306	1314	Continuing	Continuing
A. Mission Descript	A. Mission Description and Justification: Develop and transition to procurement petroleum storage and distribution systems.	and transiti	on to procur	ement petro	leum storage	and distribu	ıtion systems				
Acquisition Strateg	Acquisition Strategy: Development of and transition to competitive procurement for all items under this project.	on to compet	itive procur	ement for all	l items unde	r this project					
FY 1996 Accomplishments:	ihments:	-	;		·	;	•		,		
100	Completed rhase if rrQ1, logistics demonstration, and physical contiguration audit for Lightweight Arctic Forward Area Refueling (LAFARE). Conducted Milestone III - type classification for LAFARE.	gistics demor e classificatio	ıstration, an on for LAF⁄	d physical co NRE.	ontiguration	audit for Lig	ghtweight Ar	ctic Forware	d Area Refue	eling (LAFA	ARE).
• 430	Performed market investigation and tested improved Tactical Fuel Storage and Distribution System (TFSD) candidate items.	n and tested	improved T	actical Fuel	Storage and	Distribution	System (TF:	SD) candida	ite items.		
60	Prepared statement of work and specifications for design and testing of TFSD components. Continued long term exposure testing of tank fabrics	id specificati	ons for designer	gn and testin	g of TFSD (components.					
Total 1135	0	0									
FY 1997 Planned Program:	rogram:										
35	Award TFSD design contract.										
150	Design and fabricate TFSD initial prototypes.	itial prototyp	es.								
951	Initiate 1FSD component testing. Procure for a few patroleum anolity analysis set (DOAS) DMD anototimes.	ng. Froleim anel	ity ono troic	(OV)	DNAD sustat	\$ \$					
50	Continue long term exposure testing of tank	u Orcum quar estino of tan	ny ananysis k fabrics	set (rQAS) is	EIMIL protot	ypes.					
• 24	Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program	search/Small	Business T	echnology T	ransfer (SBI	R/STTR) Pro	ogram				
Total 1011				3	,		ò				
FY 1998 Planned Program:	rogram:										
• 150	Prepare contract package for PQAS EMD contract.	QAS EMD	ontract.								
• 70	Administer source selection process for PQA	ocess for PQ	AS.								
230	Develop PQAS specification.	,									
421	Continue fabrication, assembly and testing TFSD components.	/ and testing	TFSD comp	onents.							
Total 1071	Continue tong term exposure and durability	ind durability		testing of tank fabrics.							
Project DL41				Page 18 of 43 Pages	43 Pages			Exhibit	Exhibit R-2 (PE 0604804A)	304804A)	





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	LIFICAT	HS NOI	EET (R	-2 Exhil	oit)		DATE Fet	February 19	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopme	ant	PE NU 060. Eng	PE NUMBER AND TITLE 0604804A Logic Engineering Devening D	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	& Engine ment	er Equip	ment -		PROJECT DL41
 FY 1999 Planned Program: 1022 Award and administer PQAS EMD contract for design, fabrication and test system prototype. 59 Complete specification for TFSD components. Total 1081 	EMD contrac SD compone	t for design, nts.	fabrication	and test syst	em prototyp	ပ်				
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 1187 1220	FY	FY 1997 1033 1011	FY 1998 1155	FY 1999 1177	9 <u>99</u> 77			
Adjustments to Appropriated value FY 1998 Pres Bud Request		1135		1011	1071	1081	81			
C. Other Program Funding Summary RDTE, 0603804.DK41, POL Distribution	FY 1996 864	FY 1997 872	FY 1998 859	FY 1999 824	FY 2000 899	FY 2001 892	FY 2002 944	FY 2003 946	To Compl Cont	Total Cost Cont
Equipment Advanced Development OPA 3, MA7400, Items Less Than \$2.0M (POL) OPA 3, M60300 Fuel System Supply Point OPA 3, R21800 Forward Area Refuel System, Aviation	4554	6442	6275	5914 559 2743	6991 1923 2340	6883 2170 2371	7981 3806 3877	7886 5355 3884	Cont Cont Cont	Cont Cont
D. Schedule Profile	FY 1996 2 3	4	F)	FY 1997 2 3	4	FY 1998 2 3	3 4		FY 1999 2 3	4
Complete Phase II PPQT and logistic demonstration for LAFARE Complete market investigation of TFSD components Complete physical configuration andit of LAFARE TDP	* * *		•	ı		ı		ı		
Conduct Milestone III IPR for LAFARE Award TFSD competitive design contract		*		×						
Project DL41			Page 19 of 43 Pages	13 Pages			Exhibi	Exhibit R-2 (PE 0604804A)	504804A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment - Engineering Development	PROJECT er Equipment - DL41
D. Schedule Profile		8 FY 1999
Institution of the specifications of the specification of the specifications of the spec	4 - 2	3 X X X X X X X X X X X X X X X X X X X
*Milestone completed *Milestone completed		
	e 20 yl 43 Fages 966	EXIIIDIL K-Z (P.E. UBU4804A) Item 98



RDT&E PROGRAM ELEMENT/PR	OJECT	COST B	REAKDO	PROJECT COST BREAKDOWN (R-3)	3)	DATE F.	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604804A Logi Engineering De	AND TITLE IA Logist ring Deve	PE NUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	ipment -	a . u	PROJECT DL41
A. Project Cost Breakdown Hardware Development Test and Evaluation Government Engineering and Support Government Program Support SBIR/STTR Total	FY 1996 613 103 346 73		FY 1997 421 46 470 50 24 1011	EY 1998 301 230 450 90 1071	FY 1999 751 80 160 90			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations - TARDEC Support and Management Organizations - ARL, Navy, ATCOM Test and Evaluation Organizations - TECOM, TEXCOM	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total
Miscellaneous:TARDECIn-HouseVariousContractorsVariousVariousTECOMMIPR9702TEXCOMMIPR9402ARLMIPR9602NavyMIPR9701SBIR/STTR9701		242 2566 24 20	298 529 113 10 25 160	500 437 40 10	450 446 50 25 100	311 720 30 20	Cont Cont Cont Cont	Cont Cont Cont Cont
Government Furnished Property - None Subtotal Miscellaneous Total Project		2852 1428	1135 1135	1011	1071	1081	Cont	Cont
Project DL41	Page	Page 21 of 43 Pages 967	ડેલ્ડ		Exh	Exhibit R-3 (PE 0604804A)	0604804A)	Item 98

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RDT&E BUDGET ITEM JUS	EM JUS	TIFICA.	TION SI	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fel	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Jevelopm	lent	PE NI 060 Enç	PE NUMBER AND TITLE 0604804A Logis Engineering Dev	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment - Engineering Development	& Engine ment	er Equip	oment -	<u>م</u> ا	PROJECT DL42
COST (in Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DL42 Camouflage System Engineering Development	734	942	896	843	405	397	345	361	361 Continuing Continuing	Continuing

A. Mission Description and Justification: Project DL42, which was restructured in FY 96 from DH01, provides for development and transition to procurement low cost, low observable systems for suppression of visual, near-infrared, thermal, radar, and acoustic signatures of highly mobile and semi-mobile weapon assets.

Acquisition Strategy: Develop camouflage systems for the Services and transition items to competitive procurement.

FY 1996 Accomplishments:

Conducted production prove-out testing for desert Ultralightweight Camouflage Screening System (ULCANS). Total

FY 1997 Planned Program:

- Develop desert ULCANS.
- Develop urban ULCANS for Military Operations in Urban Terrain (MOUT) Advanced Concept Technology Demonstration (ACTD), 539 380 23 942
 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program
 - Total

FY 1998 Planned Program:

- Continue development of ULCANS.
- Demonstrate urban ULCANS for MOUT ACTD. 250
 - Incorporate desert ULCANS 112 896

FY 1999 Planned Program:

- Develop hyperspectral signature enhancements in ULCANS.
- Develop multispectral camouflage system (MSCS) mobile equipment. 329
 - Incorporate arctic and urban ULCANS. 114 843

Project DL42

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Exhibit R-2 (PE 0604804A)



RDT&E BUDGET ITEM JUS	STIFICATION SHEET (R-2 Exhibit)	ON SHEI	ET (R-;	2 Exhik	oit)		DATE FeI	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	nent	PE NUMBE 06048(Engine	DE NUMBER AND TITLE 0604804A Logis Engineering Devening D	PE NUMBER AND TITLE 0604804A Logistics & Enç Engineering Development	Ջ Engine nent	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment - Engineering Development	oment -		PROJECT DL42
 B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request 	FY 1996 1255 1290 -556 734	FY 1997 962 942 942		FY 1998 962 896	FY 1999 959	999 <u>9</u> 959 843			
Change Summary Explanation: Funding: FY 1996 funding reduction (-493) was reprogrammed to higher Army priority RDTE projects and (-28) to pay undistributed Congressional reductions and rescissions. Reduction in FY 1998 (-66) and FY 1999 (-116) funding was also realigned to higher Army priority RDTE projects (-130). Schedule: Delayed ULCANS program by three quarters.	rammed to high 998 (-66) and F 3.	ter Army prior 'Y 1999 (-116	ity RDTE	projects an was also re	d (-28) to p aligned to h	ay undistrib igher Army	uted Congre priority RD	ssional (TE projects (-130).
C. Other Program Funding Summary FY 1996 RDTE, 0602712.AH35, Camouflage Technology	FY 1997	FY 1998 FY	FY 1999 1 2058	<u>FY 2000</u> 2161	FY 2001 2486	FY 2002 2538	FY 2003 2598	To Compl Cont	Total Cost Cont
D. Schedule Profile 1 2 3 Desert ULCANS P31 Milestone Decision	ð 3 4	FY 1997		4	FY 1998 2 3 X	88 3 4 4	_	FY 1999 2 3	4
Review (MDR) Arctic ULCANS P31 MDR Urban ULCANS P31 MDR								×	×
Project DL42	P_{c}	Page 23 of 43 Pages	ages			Exhibi	Exhibit R-2 (PE 0604804A)	604804A)	
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ECT C	OST BREAK	DOWN (R-3		DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment - Engineering Development	E istics & Engi evelopment	neer Equip	ment -	PROJECT DL42
 A. Project Cost Breakdown Government Engineering Support Contractor Engineering Support Developmental Test and Evaluation Travel Miscellaneous SBIR/STTR Total B. Budget Acquisition History and Planning Information: None 	FY 1996 294 150 250 40 734	FY 1997 379 340 150 20 23 942	FY 1998 400 284 150 30 32 896	EX 1999 400 229 150 30 34 843		
	6	D oct 21 P oct 2		i. L		
	1 1 2 2 2	970			17-5 (TE 00046047)	Item 98



RDT&E BUDGET IT	ITEM JUS	TIFICAT	FION S	TIFICATION SHEET (R-2 Exhibit)	-2 Exhil	oit)	-	DATE Fel	February 1997	197
вирбет астіліту 5 - Engineering and Manufacturing Developm	Developm	ent	PE NI 060 Enç	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	רוד∟E ogistics Develop	& Engine ment	er Equip	ment -]	PROJECT DL43
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DL43 Engineering Development	0	0	0	1114	2802	2499	4335	2830	Continuing	Continuing
A. Mission Description and Justification: Develops engineer garrison and field operations.	ops engineer	support equi	pment such	as firetrucks	, electrical di	istribution sy	stems, and	floodlights w	support equipment such as firetrucks, electrical distribution systems, and floodlights which are used for	d for
Acquisition Strategy: EMD and transition to production.	luction.									
FY 1996 Accomplishments: Project not funded in FY 96	1FY 96									
FY 1997 Planned Program: Project not funded in FY 97	1 FY 97									
FY 1998 Planned Program: Project not funded in FY 98	1 FY 98						٠			
 FY 1999 Planned Program: 400 Develop performance specifications for multiple Engineer Support Equipment (ESE). 500 Conduct market investigation for multiple ESE items. Total 1114 	cations for mo for multiple testing for m	ultiple Engin ESE items. ıultiple ESE	eer Support items.	Equipment ((ESE).					
B. Project Change Summary FY 1997 President's Budget Appropriated Value		<u>FY 1996</u> 0		FY 1997 0	FY 1998 0	FY 1999 0	0 .			
Adjustments to Appropriated Value FY 1998 Pres Bud Request		0		0	0	1114	14			()
Change Summary Explanation: Project is a new start in FY 1999 and was therefore increased (+1114)	ırt in FY 1999	and was the	erefore incre	ased (+1114	· ·					
Project DI 43			Page 25 of 43 Pages	43 Pages			Exhibi	Exhibit R-2 (PE 0604804A)	604804A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	FION SE	HEET (R	-2 Exhil	bit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Jevelopme	ent	PE NU 060 Eng	PE NUMBER AND TITLE 0604804A Logis Engineering De	PENUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment - Engineering Development	er Equip	ment -		PROJECT DL43
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	$\overline{\mathrm{FY}2000}$	FY 2001	FY 2002	FY 2003	To	Total
OPA 3, M15800, Truck, Firefighting,				2137	4354	4485	4707	3244	Compl	Cont
OPA 3, M56400, Generator Set, DE, 750kW OPA 3, M59100, Distribution System, 150kW OPA 3, M72100, Floodlight Set, Electric, Trailer	·			1994	1993	1993	3187 2990 4045	3287 3084 4212	Cont Cont Cont	Cont Cont
OPA 3, MA8050, Items Less than \$2.0M (CSS Equipment)	4620	1152	1180	3891	3039	4336	13516	13288	Cont	Cont
D. Schedule Profile	FY 1996	_	- H. C	FY 1997	-	FY 1998	∞ ′	-	FY 1999	4
Conduct market investigation Conduct pre-production testing Develop performance specifications		-	Page 26 of 43 Pages	3. Pages	•	1		Exhibit R-2 (PF 0604804A)	7 X X X X X X X X X X X X X X X X X X X	× ×
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RDT&E PROGRAM ELEMENT	RAM ELEM	ENT/PRO	JECT C	OST BF	REAKDO	/PROJECT COST BREAKDOWN (R-3)	<u> </u>	DATE Fe	February 1997	76
вирсет астіvіту 5 - Engineering and Manufacturing Development	facturing Dev	elopment		PE NUMBER AND TITLE 0604804A Logis Engineering De	PE NUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	ics & Eng	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment - Engineering Development	pment -	a O	PROJECT DL43
A. Project Cost Breakdown Developmental Test and Evaluation Performance Specification Development Market Investigations Total	nent		FY 1996	FY 1997	766	FY 1998	FY 1999 200 400 514 1114			
B. Budget Acquisition History and Planning Information	l Planning Inform	ation								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing or Funding Obligation Activity Vehicle Date Product Development Organizations: None Support and Management Organizations: None		Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	<u>FY 1996</u>	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Test and Evaluation Organizations. Notice Miscellaneous TARDEC PO Varior TECOM MIPR Varior	Various Various							914	Cont	Cont
Government Furnished Property: None	None									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Subtotal Miscellaneous Total Project								1114	Cont	Cont
Project DL43			Page	Page 27 of 43 Pages	es		Exhib	Exhibit R-3 (PE 0604804A)	0604804A)	
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	RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION S	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fe l	February 1997	6
BUDGET ACTIVITY 5 - Engineerir	BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE NE 060 Enç	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	ritle ogistics Develop	& Engine	er Equip	oment -		РRОЈЕСТ D194
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D194 Engine Driven Development	Engine Driven Generators Engineering Development	1423	2183	7534	9015	8184	5290	2244	1417	Continuing	Continuing
A. Mission Descri	A. Mission Description and Justification: Develop and transition to procurement a series of diesel engine driven generator sets/auxiliary power units and provide continual modernization of fielded sets in order to meet federally mandated environmental statutes with reduced weight and size and reduced thermal signatures.	p and transit teet federally	ion to procu mandated e	rement a ser nvironment	ies of diesel al statutes wi	engine drive th reduced v	en generator veight and si	sets/auxiliar ize and redu	on to procurement a series of diesel engine driven generator sets/auxiliary power units and prov mandated environmental statutes with reduced weight and size and reduced thermal signatures.	ts and provid signatures.	۵
Acquisition Strategy:	gy: Develop and transition to competitive procurement all items in this project.	ompetitive pi	ocurement a	III items in tl	nis project.						
FY 1996 Accomplishments:	lishments:										
261		Volt Direct (Surrent (VD)	C) Auxiliary	Power Unit	(APU) Pre-	Production (Qualification	Test (PPQT) models.	
243	Completed fabrication of 5kW 28VDC APU PPQT models.	7 28VDC AP	models. U PPQT mo	dels.							
• 650		s for design	and prototyp	e developm	ent of 3kW 7	Factical Qui	et Generator	(TQG).			
Total 1423											
FY 1997 Planned Program:	Program:										
• 130		DC APU PP	QT models.							•	
129		al programı	eview of 5k	W 28VDC ∤	APU.						
311	Continue development of 3kW 1QG sets. Evaluate designs for lightweight 3kW TOG	/ 1 QG sets. tht 3kW TOO	i sets from c	sets from competitive contract.	contract						
45		search/Small		chnology T	business Technology Transfer (SBIR/STTR) Program	R/STTR) Pro	ogram				
Total 2183							1				
FY 1998 Planned Program:	Program:										
• 2400	Continue hardware development for 3kW T	ent for 3kW?	TQG								
• 2100		W TQG									
759		3kW TQG		(544)							
375	Initiate nardware development for Frime Fower System (FFS) Initiate 100 & 200kW Utility Set Program	t tor rrime r Set Program	ower System	1 (FPS)							
Total 7534))									
Project D194				Page 28 of 43 Pages	43 Pages			Exhibi	Exhibit R-2 (PE 0604804A)	604804A)	



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	-IS NOI	HEET (R	-2 Exhil	oit)		DATE Fet	February 1997	760
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopme	ınt	PE NU 060 Eng	PE NUMBER AND TITLE 0604804A Logis Engineering Dev	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	& Engine ment	er Equíp	ment -		PROJECT D194
 FY 1999 Planned Program: 400 Complete development, testing, and transition 3kW generator set to procurement. 5015 Complete hardware and initiate test/evaluation of PPS 3600 Initiate hardware development for 100 & 200kW sets Total 9015 	g, and transiti te test/evaluat t for 100 & 20	ition 3kW gen ation of PPS 200kW sets	nerator set to) procuremer	; ;					
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 812 833	FY	FY 1997 2230 2183	FY 1998 269	FY 1999 286	68 99			
Adjustments to Appropriated Value FY 1998 Pres Bud Request		+590 1423		2183	7534	9015	ν.			
Change Summary Explanation: Funding: FY 1996 funding was increased (+611) to allow acceleration of the 3kW TQG. FY 1998 (+7265)/FY 1999 (+8729) increase to allow RDTE on 3kW TQG, PPS and 100 & 200kW Utility Set Program.	+611) to allov)) increase to	v acceleratic allow RDTE	n of the 3kV	W TQG. 2G, PPS and	100 & 200	cW Utility So	et Program.			
C. Other Program Funding Summary	FY 1996	FY 1997	FY 1998	FY 1999	$\overline{\mathrm{FY}\ 2000}$	FY 2001	FY 2002	FY 2003	To	Total
RDT&EPE0603804A/DG11 OPA,BA3;Generators & Assoc Equip (MA9800)	216 13482	213 29980	214 7706	1371 74952	1020 101113	743 90717	616 43990	570 41452	Cont	Cont
D. Schedule Profile	FY 1996	~	F)	FY 1997	-	FY 1998	~ ~	-	FY 1999	-
Begin fabrication of 5kW 28VDC APU X* PQT models Begin testing of 5kW 28VDC APU PQT	N	* *	7	n	1	7		-		4
models Complete fabrication of 5kW 28VDC PQT	*									
models Complete testing of 5kW 28VDC APU PQT models			×							
Project D194			Page 29 of 43 Pages	13 Pages			Exhibi	Exhibit R-2 (PE 0604804A)	304804A)	
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RDT&E BUDGET ITEM JUST	EM JUSTIFICA	FIFICATION SHEET (R-2 Exhibit)	۲-2 Exhik	oit)	DATE	February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopment	PE NUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	TITLE Logistics { g Developi	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	Equipmen	ıt -	Р ROJECT D194
D. Schedule Profile	FY 1996	FY 1997	4	FY 1998 2 3	4	FY 1999 2 3	4
Complete preparation of formal program review of 5kW 28VDC APU Begin development of 3kW (TQG) Award competitive contracts for design and prototype development of 3kW sets (Phase I) Evaluate competitive designs for lightweight 3kW generator sets (Phase I) Continue hardware development and complete Phase I, downselect to one contractor, and initiate Phase II hardware delivery, testing and logistics data Complete data and testing and transition 3kW to procurement (Milestone III) Award multiple contracts for competitive designs of Prime Power Systems (PPS) Evaluate PPS designs and downselect to single contractor Award Phase II of PPS EMD for fabrication/test/eval/data Initiate EMD program on 100 & 200kW utility sets Award multiple contracts for competitive designs/hardware/testing of 100 & 200kW			× × ×		· ×	× × ×	
* Milestone completed							
Project D194		Page 30 of 43 Pages			Exhibit R-2	Exhibit R-2 (PE 0604804A)	7)
							,



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RDT&E PROGRAM ELEMENT	SRAM EL	EMENT/PRO	JECT (SOST B	REAKD(/PROJECT COST BREAKDOWN (R-3)	3)	DATE F (February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ıfacturing l	Development		PE NUMBER AND TITLE 0604804A Logis Engineering Dev	AND TITLE 1A Logist ering Dev	re number and title 0604804A Logistics & Eng Engineering Development	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment - Engineering Development	ipment -		РРОЈЕСТ D194
A. Project Cost Breakdown Primary Hardware Development Test and Evaluation Government Engineering & Support Program Management Miscellaneous SBIR/STTR Total			FY 1996 1008 182 70 75 88 88	FY	FY 1997 1478 130 430 60 60 40 45 2183	FY 1998 3700 2100 1100 565 69 7534	FY 1999 5400 1900 1200 515			
B. Budget Acquisition History and Planning Information	d Planning Inf	<u>ormation</u>								
Performing Organizations Contract Contract Government Method/Type Performing or Funding Organizations	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Contractors CPFF Various	9406				1008	1448	4500	0099	Cont	13556
Support and Management Organizations None Test and Evaluation Organizations Miscellaneous: In-House Various TECOM MIPR Various SBIR/STTR	zations None s Various Various	NA	NA		215	510 180 45	1734	1715	Cont	4174 2380 45
Government Furnished Property None	None									
Subtotal Product Development Subtotal Support and Management					1008	1448	4500	0099		13556
Subtotal Test and Evaluation Total Project					415	735 2183	3034 7534	2415 9015		6599
Project D194			Page	Page 31 of 43 Pages	šes		Exhi	Exhibit R-3 (PE 0604804A)	0604804A)	

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	TION SE	HEET (R	-2 Exhil	bit)		DATE Fe t	February 1997	197
BUDGET ACTIVITY 5 - Engineering	вирбет астіvіту 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NU 060 Eng	PE NUMBER AND TITLE 0604804A Logis Engineering Dev	PE NUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	er Equip	ment -	± -	РRОЈЕСТ D279
ŏ	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D279 Airdrop Equipme	Airdrop Equipment Engineering Development	1416	1414	1359	1354	1380	1371	4864	4701	Continuing	Continuing
A. Mission Descript delivery equipment w	A. Mission Description and Justification: Develop and transition to procurement cargo and personnel parac delivery equipment will improve safety and facilitate airborne cargo insertions into non-permissive environments.	relop and tran e airborne ca	nsition to pre rgo insertion	ocurement cans is into non-p	argo and per ermissive er	sonnel parac ivironments.	Develop and transition to procurement cargo and personnel parachutes, airdrop containers and associated equipment. Air litate airborne cargo insertions into non-permissive environments.	p containers	s and associa	ated equipm	ent. Air
Acquisition Strategy	Acquisition Strategy: Developments transition to competitive procurement.	competitive p	rocurement.								
FY 1996 Accomplishments: • 343 Type complements:	hments: Type classified 60,000 pound airdrop system (single and linked platform). Completed the Army airdrop capability effort directly supporting the USAF C17 program ensuring a fully operational airborne capability and	airdrop syst	em (single a	nd linked pla supporting th	atform). 1e USAF C1	7 program ea	nsuring a ful	ly operation	al airborne c	capability ar	Ţ.
• 773	improving airborne soldier safety. Conducted technical/operational tests of the	ety. nal tests of th	e Guided Pa	rafoil Air Dı	rop System ·	· Light (GPA	Guided Parafoil Air Drop System - Light (GPADS-L) as part of the Warfighting Rapid Acquisition	rt of the Wa	rfighting Ra	ıpid Acquisi	tion
Total 1416	ingiani (micii).										
FY 1997 Planned Program:	rogram: Fabricate test items and conduct technical testing of prototype Advanced Research Parachute System (ARPS) to improve the safety and lethality of	ict technical	esting of pr	ototype Adv	anced Resea	rch Parachut	e System (A	RPS) to imp	rove the saf	fety and leth	ality of
• 1079	Force AAI Alroonie assault operations. Acquire and evaluate prototype systems for 500 foot, medium weight (20,000 lbs) Air Drop System providing impartance and evaluate for Army compations.	perations.	r 500 foot, n	nedium weig	ght (20,000 l	bs) Air Drop	500 foot, medium weight (20,000 lbs) Air Drop System providing improved accuracy and significantly imment and ITSAE delivery aircraft during airborne assault operations	viding impr	oved accurad	cy and signi	ficantly
• 35 Total 1414	Small Business Innovation Research/Small	search/Small	Business T	echnology T	ransfer (SB)	philom and Oord to hearly an eart, the ing an oord as Business Technology Transfer (SBIR/STTR) Program	ogram				
FV 1998 Planned Program:	rogram:										
1200	Todater component development for ARPS. Begin developmental testing for ARPS.	nent for ARP	S. Begin de	velopmental	l testing for	ARPS.	5. Begin developmental testing for ARPS.	Medium			
Total 1359		csu Osci res	201 000 101 1		ony mendi	series by se) - Modium			
Project D279			:	Page 32 of 43 Pages	43 Pages			Exhib	Exhibit R-2 (PE 0604804A))604804A)	
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в∪р бет Асті∨іт У 5 - Engineering and Manufacturing Development	Development	PE NI 060 Enç	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	ntle ogistics { Developi	& Engine ment	er Equip	ment -	PR (O	PROJECT D279
 FY 1999 Planned Program: 600 Complete development testing for ARPS. 500 Complete test and evaluation and type classify 500 foot LVADS - Medium. 254 Initiate program for Advanced Parafoil Aerial Delivery System (APADS)/GPADS - Medium. Total 1354 	g for ARPS. and type classify 500 fo d Parafoil Aerial Delive	ot LVADS - ry System (A	Medium. PADS)/GPAL	OS - Medium	ن ۔				
B. Project Change Summary FY 1997 President's Budget Appropriated Value	EY 1996 1452 1493		FY 1997 1444 1414	FY 1998 1452	FY 1999 1452	፩ /1 €/2			
FY 1998 Pres Bud Request	14	-/, 1416	1414	1359	1354	4			
C. Other Program Funding Summary RDTE, 0603804.D266, Airdrop Equipment	FY 1996 FY 1997 1116 1414	FY 1998 1359	FY 1999 1353	FY 2000 1336	FY 2001 1503	FY 2002 4864	FY 2003 4700	To Compl Cont	Total Cost Cont
OPA 3, R10901, Low Velocity Airdrop Delivery System (LVADS)				1586	1090				2676
OPA 3, R10903 Enhanced Container Delivery System (ECDS)				5252					
OPA 3, R10904 Advanced Tactical Parachute Delivery System (ATPDS)					14874				
D. Schedule Profile	FY 1996	т _Т	FY 1997	1	FY 1998	8 6 7	1 F	FY 1999	V
Support USAF to Defense Acquisition X* Board (DAB) Decision on C-17 Aircraft	n		n	-			•		+
Type Classify 60K airdrop system GPADS-L TT and CT	*X *X								
Award ARPS TOA and design contract			×						
Project D279		Page 33 of 43 Pages	43 Pages			Exhibi	Exhibit R-2 (PE 0604804A)	04804A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ICATION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment - Engineering Development	PROJECT Equipment - D279
D. Schedule Profile FY 1996	FY 1997 FY 1998	FY 1999
Acquire and evaluate systems for 20K Airdrop System Start ARPS development test Complete ARPS development test Type Classify 500 foot LVADS (Medium)	7	t
*Milestone completed		
Project D279	Page 34 of 43 Pages	Exhibit R-2 (PE 0604804A)
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RDT&E PROGRAM ELEMENT/PROJECT	JECT COS	COST BREAKDOWN (R-3)	DOWN (R-	3)	DATE F	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE N 06(PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	E istics & Eng evelopment	yineer Equ	ipment -	.	РRОЈЕСТ D279
A. Project Cost Breakdown Primary Hardware Development Program Management Support Test and Evaluation SBIR/STTR Total	FY 1996 936 185 295 1416	FY 1997 924 155 300 35 1414	FY 1998 149 210 1000 1359	FY 1999 741 163 450 1354			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Preforming or Funding Obligation Activity Activity Vehicle Date EAC	Project Total Office Prior to EAC FY 1996	Total Prior to 'Y 1996 FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
SSCOM In-House Metric Systems TBD TBD MICOM MIPR	16	16947 936	924	159	754	Cont Cont	19720
Def Eval Spt Acty Army Nat'l Guard Support and Management Organizations SSCOM	2	2390 185	155	200	150	Cont	3080
Test and Evaluation Organizations SSCOM In-House Ft. Bragg MIPR	9	6023 295	300	1000	450	Cont	8908
SBIR/STTR Government Furnished Property: None			35				35
Project D279	Page 35 of 43 Pages 981	43 Pages		Exh	Exhibit R-3 (PE 0604804A)	0604804A)	Item 98

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BRI	EAKDO	WN (R-3	3	DATE F 6	February 1997	16
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	ND TITLE Logisti ing Deve	ics & Eng	ineer Equ	ipment -	d U	PROJECT D279
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1996 16947 2390 6023	FY 1996 936 185 295 1416	FY 1997 924 155 335 1414	FY 1998 159 200 1000 1359	F <u>Y 1999</u> 754 150 450	Budget to Complete	Total Program 19720 3080 8103 30903
Project D279	Page 36 of 43 Pages	S		Exh	Exhibit R-3 (PE 0604804A)	0604804A)	,
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BUDGET ACTIVITY 5 - Engineerin	вирсет астіvіту 5 - Engineering and Manufacturing Developm)evelopm	ent	PE NI 060 Enç	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	TITLE Ogistics Develop	& Engin	eer Equi	oment -		РКОЈЕСТ D429
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D429 Rigid Wall She	Rigid Wall Shelter Engineering Development	2296	3193	1498	1024	1159	1152	.2157	2166	Continuing	Continuing
A. Mission Descrip	A. Mission Description and Justification: Develops a series of Rigid Wall Shelters (RWS) with added capabilities and enhanced survivability.	ps a series of	Rigid Wall	Shelters (R ¹	WS) with ad	led capabilit	ies and enha	inced surviv	ability.		
Acquisition Strate (SICPS) shelter wil	Acquisition Strategy: Developments transition to procurement (SICPS) shelter will be procured through OPA2.	procurement	funded thro	ıgh PM inte	rchange requ	ıirements, ex	cept the Lar	ge Standard	Integrated C	funded through PM interchange requirements, except the Large Standard Integrated Command Post System	st System
FY 1996 Accomplishments:	shments:										
• 826	Type classified version 3 of the SICPS shelter.	ie SICPS she	lter.								
• 548	Tested new technology components [engine, generator, Environmental Control Unit (ECU), regenerative Chemical Biological (CB) filters] for objective SICPS: lighter weight, quieter, less maintenance.	onents [engir ht. anieter: le	e, generator	, Environme	ntal Control	Unit (ECU)	, regenerativ	e Chemical	Biological ((CB) filters] f	or
• 269		lards Organiz	ation (ISO)	P3I compon	ents.						
• 653 Total 2296	rabricated Upgraded Ligntweight Multipurpose Shelter (LMS) prototypes.	agnt Multipu	rpose Shelte	r (LMS) pro	totypes.						
FY 1997 Planned Program:	Program: Conduct Technical Teeting of ISO D21 Components	180 D31 Cor	nononte								
570		iso isi cui ide.	nponents.								
915		ology SICPS	components.	, ,	•	•	;	,			
1140	Complete design and begin tabrication of I Small Business Innovation Research/Small	brication of I search/Small	arge SICPS Business Te	P31 compon schnology T	large SICPS P31 components (on-board power and collective protection). Business Technology Transfer (SBIR/STTR) Program	ird power an R/STTR) Pr	d collective	protection).			
Total 3193				6							
FY 1998 Planned Program:	rogram:										
306	Complete development of ISO Component	Component	P31.								
908		S upgrade.									
451	Develop new component technology for SICPS P3I Shelter. Develop concent design of the Ballistically Hardened Shelter (BHS)	nology for Si Ballistically	CPS P3I Shelter.	elter. helter (RHS	_						
Total 1498				Tarian Tarian							
Project D429				Page 37 of 43 Pages	43 Pages			Exhibi	Exhibit R-2 (PE 0604804A)	604804A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (F	8-2 Exhibi	t)	DATE Feb	February 1997	7
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	тпге Logistics & J Developn	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment - Engineering Development	uipment -	PR D2	РКОЈЕСТ D429
 FY 1999 Planned Program: 600 Award design and fabrication contract for the BHS. 424 Conduct front end analysis on Camouflage, Concealme Total 	re BHS. Concealment and Detection (CCD) Shelter.) Shelter.				
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adiustments to Appropriated Value	FY 1997 3261 3193	<u>FY 1998</u> 2386	FY 1999 1093			
	3193	1498	1024			
Change Summary Explanation: Funding: FY 1996 funding was decreased (-495) for undistributed Congressional and reductions and rescissions. FY 1998 funding decrease (-888) necessary to realign to ATCCS program to reduce fielding delays.	195) for undistributed (ecessary to realign to A	Congressional a	nd reductions and rate to reduce fielding	escissions. delays.		
C. Other Program Funding Summary	EV 1000 EV 1000	1 000C XE	C000 X3 1000 X	C000 XEL C	To	Total
		•	FT 2001 977 1970		Cont	Cont
Project D429	Page 38 of 43 Pages		П	Evhihit R-2 (DE 06048044)	(048044)	
	984				1	Item 98

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUSTIFICATIO	N SHEET (R-2 Exhi	bit)	DATE February 1997	ry 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	opment	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment - Engineering Development	& Engineer Equ oment	ipment -	PROJECT D429
D. Schedule Profile	FY 1996	FY 1997	FY 1998	FY 1999	
Milestone III for non-expandable Electro- Magnetic Interference (EMI) ISO shelter TT of ISO EMI P3I components Milestone III version 3 SICPS Rigid Wall Shelter TT LMS Upgrade Complete ISO EMI P31 Complete LMS Upgrade Develop SICPS P31 technology Develop BHS Concept Award BHS prototype contract Conduct CCD FEA *Milestone completed		5	o ××	it R-2 (PE 0	Y X
		400			Item 98

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	GRAM EL	EMENT/P	ROJECT	COSTB	REAKD	OWN (R-	3)	DATE Fe	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	ufacturing L	evelopme	nt	PE NUMBER 060480 Engine	PE NUMBER AND TITLE 0604804A Logis Engineering Dev	PE NUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	ipment -		РКОЈЕСТ D429
A. Project Cost Breakdown Primary Hardware Development Program Management Support Test and Evaluation SBIR/STTR Total			FY 1996 960 490 846 2296		FY 1997 1423 812 880 78 3193	FY 1998 761 369 368 1498	FY 1999 519 252 253 1024			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Activity Activity Vehicle Date	nd Planning Info B Award or Obligation	ormation Performing Activity EAC	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations SSCOM In- House DEEPCO Various (Also Radian, GTS.) Ft. Belvoir MIPR	ons Various			12660	096	1423	761	519	Cont	16323
(Also TEXCOM, ATCOM, USA Support and Management Organizations SSCOM	USA Med, lizations	ARL,	Army Nat'l	Guard.) 5551	490	812	369	252	Cont	7474
Test and Evaluation Organizations TECOM SBIR/STTR	SU			8279	846	880 78	368	253	Cont	10626 78
Government Furnished Property: None	: None									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project				12660 5551 8279 26490	960 490 846 2296	1423 812 958 3193	761 369 368 1498	519 252 253 1024		16323 7474 10704 34501
Project D429			Pa	Page 40 of 43 Pages	sası		Exh	Exhibit R-3 (PE 0604804A)	0604804A)	14000 000
				986						Item 98



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SI	HEET (R	2-2 Exhil	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE NI 060 Enç	PE NUMBER AND TITLE 0604804A Logis Engineering Dev	PE NUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	& Engine	DE NUMBER AND TITLE OF COMBER AND TITLE OF COMBORA LOGISTICS & Engineer Equipment - Engineering Development	ment -	.	РRОЈЕСТ D461
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D461 Marine Oriented Logistics Equipment Engineering Development	329	0	0	2195	4433	1495	1255	2901	2901 Continuing Continuing	Continuing

This project provides engineering development of Army watercraft systems. Efforts for the Pusher Tug and Floating Crane Cargo -60 (LARC-LX) phase, began a prototype for Communication, Electronic, and Navigation (CEN) suite, and completed anchor mooring and safety enhancements for will provide the engineering development necessary to meet the operational requirements for these craft. The FY 96 effort completed the Lighter Amphibian Resupply the Causeway. FY 99 efforts will include full scale prototyping for the Containerized Maintenance Facility (CMF); full scale development of the Rapidly Installed Breakwater (RIB); and initiate development of the Harbor Master Communication Center (HMCC). A. Mission Description and Justification:

Acquisition Strategy: Floating Crane -- Competitive procurement to performance specification. Pusher Tug -- Competitive procurement to performance specification

FY 1996 Accomplishments:

- Developed optimum "pusher knee" configuration for the pusher tug.
- Developed the design and storage of camel for interface between floating crane and cargo ships.
 - Completed mooring, anchor, and safety enhancements for Causeway.
- Began prototype effort of Communications, Electronics, and Navigation suite for watercraft.
- Completed test and evaluation of LARC-LX prototype.

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program:

- Full scale development of the Containerized Maintenance Facility (CMF).
- Full scale development of the Rapidly Installed Breakwater (RIB)
- Initiate development of the Harbor Master Communication Center (HMCC). 1309

Project D461

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	ION SH	IEET (R	-2 Exhil	oit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopme	ant	PE NU 060 . Eng	PE NUMBER AND TITLE 0604804A Logis Engineering Dev	PENUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	PENUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	er Equip	ment -	<u>a</u> 0	PROJECT D461
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value		FY 1996 339 348 -19		FY 1997 0	FY 1998 0	FY 1999 2366	6			
FY 1998 Pres Bud Request		329		0	0	2195	5			
C. Other Program Funding Summary RDTE, 0603804A, D526, Marine Oriented	FY 1996	FY 1997	FY 1998	FY 1999 330	<u>FY 2000</u> 1210	FY 2001 0	FY 2002 1351	FY 2003 703	To Compl Cont	Total Cost Cont
OPA 3, M32400, Floating Crane, 100-250 Ton OPA 3, M44500, Pusher Tug, Small OPA 3, M32500, Rapidly Installed Breakwater OPA 3, M11300, Containerized Maintenance Facility	3652	14317	14073 6782 0	14009 4000 978	13986 1589 997	13893	5000	4000	Cont	70278 Cont 1589 2972
D. Schedule Profile	FY 1996	~	- F	FY 1997	-	FY 1998	∞ r	-	FY 1999	7
Pusher Tug contract award Pusher Tug material release Floating Crane Milestone I/III Floating Crane contract award Rapidly Installed Breakwater Prototype Containerized Maintenance Facility contract award Initiate Development of the Harbor Master Communication Center		t	- *×	n ×	- + ×					1
*Milestone completed Project D461		7	Page 42 of 43 Pages	13 Pages			Exhib Sidis	Exhibit R-2 (PE 0604804A)	304804A)	
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RDT&E PROGRAM ELEMENT/PROJ	ECT CO	ST BR	EAKDO	PROJECT COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	760
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	e C	PE NUMBER AND TITLE 0604804A Logis Engineering Dev	ND TITLE Logist ing Deve	PE NUMBER AND TITLE 0604804A Logistics & Eng Engineering Development	PE NUMBER AND TITLE 0604804A Logistics & Engineer Equipment Engineering Development	ipment -	.	РRОЈЕСТ D461
 A. Project Cost Breakdown Contractor Engineering Support (includes test & evaluation) Program Management Support Total 	FY 1996 299 30 329	FY 1997	<u> 76</u>	FY 1998	FY 1999 2112 83 2195			****
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Properties or Funding Obligation Activity Activity Vehicle Date EAC Broduct Descriptions	Project Office I EAC E	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
International SS-FP		1961	299			2112	Cont	Cont
Consultants, Inc. Support and Management Organizations ATCOM Test and Evaluation Organizations: None		28	30			83	Cont	171
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation		1967 58	299			2112	Cont	Cont
Total Project		2025	329			2195	Cont	Cont
Project D461	Page 43	Page 43 of 43 Pages	5		Exhi	Exhibit R-3 (PE 0604804A)	0604804A)	
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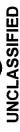
	RDT&E BUDGET ITEM JUST	EM JUS		IIFICATION SHEET (R-2 Exhibit)	HEET (F	-2 Exhi	bit)		DATE Fel	February 1997	26
8VDG 5 - E	вирсет Астіvіт y 5 - Engineering and Manufacturing Development	evelopm	ent	PE NU 060 Sys	PE NUMBER AND TITLE 0604805A Com Systems - Engir	^{IIT∟E} Somman ngineeri	PENUMBER AND TITLE 0604805A Command, Control, Communications Systems - Engineering Development	l, Comm opment	unicatior	SI SI	
	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	16740	9556	11052	16395	16423	15890	15768	15629	Continuing	Continuing
D097	D097 C3I Interoperability Network Activity	4090	1660	4178	4274	3180	3195	3090	3210	Continuing	Continuing
D098	D098 Tactical Radio Accessories	185	545	508	506	0	0	0	0	0	4734
D282	D282 SINCGARS-V Engineering Development	7189	6883	0	0	0	0	0	0	0	19897
D485	D485 C4I Interoperability Standardization and Certification	1892	471	3205	5078	5419	4786	4550	4405	Continuing	Continuing
D488	Tactical Net Radio Communications	3384	0	0	0	0	0	0	0	Continuing	Continuing
D589	Army Systems Engineering & Warfighting Technical Support	0	0	3161	6537	7824	7909	8128	8014	Continuing	Continuing

and maintain interoperability, and support an interoperability development and evaluation process consisting of an Army interoperability board and technical management to testbed. The projects in this Program Element support research efforts in the engineering and manufacturing development phase of the acquisition process and therefore are ensure that the integration of new technologies for emerging systems support joint interoperable Force XXI architecture for Army battlefield digitization. Also included is intelligence (C3I) systems and equipment, and the supporting interoperability facilities. Also included is engineering development of life-cycle capability to develop, test, Mission Description and Budget Item Justification: Supports the Army Enterprise Strategy to achieve interoperability within the Army and with the Joint/Combined the Army portion of engineering development efforts in support of the Combat Survivor Evader Locator System (CSEL). This includes the Single Channel Ground and Airborne Radio System (SINCGARS) product improvements identified in the SINCGARS System Improvement Plan; the Frequency Hopping Multiplexer (FH MUX) technologies evolving from Wireless Network Access, Communications Network Planning and Management and initiatives to establish a Multiband Radio Integrated which allows multiple radios to operate on one antenna for reduced visual signature and rapid transportability and set-up; and follow-on programs to demonstrated forces. This program includes Engineering and Manufacturing Development (EMD), interoperability evaluation of Army command, control, communications and correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604805A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (R	2-2 Exhi	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Developm	ent	090 090	PE NUMBER AND TITLE 0604805A Comi Svetems - Fndir	птсе Sommanc	PENUMBER AND TITLE 0604805A Command, Control, Communications Systems - Fngineering Development	I, Comm	unication	_	РРОЈЕСТ D097
			Ś				1			
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D097 C3I Interoperability Network Activity	4090	1660	4178	4274	3180	3195	3090	3210	3210 Continuing Continuing	Continuing

Variable Message Format (VMF) and MIL-STD-188-220A standards suites. In addition it provides the capabilities to develop, test and maintain interoperability and support a continuous life-cycle interoperability development and evaluation process. Overall, this facilitates the software development process and allows interoperability to be built A. Mission Description and Budget Item Justification: Project D097 - C3I Interoperability Network Activity: CECOM has been designated the System Engineer and evaluations of new prototypes, evolutionary system developments, new technologies, commercial products and systems interoperability. It is a virtual lab that integrates the suite of distributed communication sites and services provides the communications network necessary to electronically connect remote C4I/EW systems, labs/testbeds, field Army Interoperability Certifier for the Army's Force XXI Battlefield Digitization. CECOM as a material developer, directly supports the PEOs/PMs in the Development geographically dispersed C4I elements whether "stand alone" or embedded within a weapons platform, and has been endorsed by senior OSD and DA officials. The AIN development and evolutionary upgrades of protocol test tools to assure the capability to assess interoperability and compliance with the Army's Technical Architecture's sites, developer facilities and Battle Labs. The DIL/AIN rapidly replicates existing and evolving tactical battlefield environments to enable and facilitate comprehensive engineering mission to sustain hundreds of these systems when fielded. The Digital Integrated Lab (DIL) was established to significantly improve the Army's ability to and Acquisition of Command, Control, Communications, Computer and Intelligence/Electronic Warfare (C4I/EW) systems. CECOM also has the life-cycle software ensure interoperability on the digital battlefield. The Army Interoperability Network (AIN) provides a wide area communications backbone to electronically link Army's many programs and products, horizontally. The DIL remote external connections are provided for, primarily, by the AIN. The project also includes the into the C4I/EW systems, by supporting affordable continuous sustainment and modernization of Army C4I/EW systems for the warfighter and Force XXI

Acquisition Strategy: The efforts funded in this project are non-system specific, therefore no acquisition strategy is provided

FY 1996 Accomplishments:

- Sustained AIN Hub sites and communications
- Provided 5000+ test days of AIN support to DIL, PEOs, PMs, PDSS, etc., to achieve sustained C4I system/software Army/Joint interoperability 1207
 - Provided remote external digitization connections and telecommunications services for the DIL 1315
- Force XXI DIL Interoperability Certifications for C4I/EW systems for field use and Battlelab evaluations and experimentation 827
 - Essential AIN modernization to meet requirements 126
- AIN remote site sustainment upgrades, capital equipment improvements
- OIL test equipment, surrogate hardware, capital improvements to support Force XXI

Project D097

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Exhibit R-2 (PE 0604805A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R	2-2 Exhibit		DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering	вирсет астіvіту 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604805A Com Systems - Engir	TITLE Sommand, C ngineering	PE NUMBER AND TITLE 0604805A Command, Control, Communications Systems - Engineering Development	nunications	РРОЈЕСТ D097
FY 1997 Planned Program:	AIN Hub sites and communications 5000+ test days of AIN support to al AIN modernization to meet requinote site sustainment upgrades, capiusiness Innovation Research/Small	DIL, PEOs, PMs, PDSS, etc., to achieve sust ements al equipment improvements Business Technology Transfer (SBIR/STTR)	hieve sustained (24I system/softwar	DIL, PEOs, PMs, PDSS, etc., to achieve sustained C4I system/software Army/Joint interoperability rements tal equipment improvements Business Technology Transfer (SBIR/STTR)	ability
FY 1998 Planned Program:	est Tool development, to support deversest Tool development, to support development, to support to	ions and telecommunications services for the DIL relopment, fielding and DIL certification of C4I systems development, fielding and DIL certification of C4I syst and test support for 7500 test-days to achieve C4I/EW	ces for the DIL cation of C4I systification of C4 ys ys to achieve C4	items I systems I/EW systems/softv	vạre Army/Joint intero	oerability.
FY 1999 Planned Program:	remote external digitization connect ste VMF Test Tool development and ste 188-220 Test Tool development a AIN nationwide netword sustainme	ions and telecommunications services for the DIL provide evolutionary upgrades as standards evolve nd provide evolutionary upgrades as standards evol at and test support for 9000 test-days to achieve C	ces for the DIL tandards evolve as standards evol	ve II/EW systems/soft	ware Army/Joint inter	perability
B. Project Change Summary FY1997 Presidents Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	Sudget FY 1996 3udget 1734 1751 1751 priated Value 2339 quest 4090	FY 1997 1715 1660 1660	FX 1998 1704 4178	FX 1999 1684 4274		
Change Summary Explanation: Funding: FY96/FY98/	FY99 - Funds reprogrammed to support Force	XXI digitization efforts Page 3 of 19 Pages	s (FY 96 +2339,	FY 98 +2474, FY 9	, FY 99 +2590) Fxhibit R-2 (PF 0604805A)	
		992				Item 99





RDT&E PROGRAM ELEMENT/PRO.	'PROJECT COST BREAKDOWN (R-3)	F BREAK	DOWN (R-3		DATE February 1997	7 1997
вирдет АСТІVITY 5 - Engineering and Manufacturing Development	PE NUN 0604 Syst	PE NUMBER AND TITLE 0604805A Com Systems - Engir	PE NUMBER AND TITLE 0604805A Command, Control, Communications Systems - Engineering Development	rol, Commele lopment	unications	РRОЈЕСТ D097
A. Project Cost Breakdown Contractual Engineering Support Government Engineering Support Government Test and Evaluation Telecommunications Services Spare parts, upgrades test equipment Product Development Training Travel SBIR/STTR Total	EX 1996 1807 350 300 1315 275 10 33	FY 1997 1075 350 150 10 35 40 1660	EY 1998 1535 414 1261 439 529	EY 1999 1629 424 1261 439 521 4274		
B. Budget Acquisition History and Planning Information: Not applicable	icable			i i		
Project D097	Page 4 of 19 Pages	Pages		EXUIDI	EXNIBIT K-3 (PE 0604805A)	Jem 99

RDT&E BUDGET ITEM JUSTIFICATION	TIFICATION SHEET (R-2 Exhibit)	DATE February 1997	1997
BUDGET ACTIVITY	PE NUMBER AND TITLE		PROJECT
5 - Engineering and Manufacturing Development	0604805A Command, Control, Communications	unications	D098
	Systems - Engineering Development		

			Sys.	stems - E	ngineerii	Systems - Engineering Development	opment			
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D098 Tactical Radio Accessories	185	542	208	506	0	0	0	0	0	4734

C4I for the Warrior Concept. The user's equipment will consist of a small hand-held unit used for geopositioning, over the horizon data communications, and two-way line will include the capability to pass data directly into the standard warfighter command, control, communications, computer, and intelligence (C4I) systems envisioned by the A. Mission Description and Budget Item Justification: Project D098 - Tactical Radio Accessories: This project will provide for development efforts for the Combat forces with the capability to pinpoint the location of and establish communication with downed personnel in need of extraction from hostile territories. The CSEL system Survivor Evader Locator System (CSEL), a joint program led by the Air Force. This program will provide service, joint, and/or composite operational recovery/rescue of sight voice communications.

Acquisition Strategy: The joint Air Force led acquisition strategy is a research and development approach for the handheld unit, followed by a product contract award in

FY 1996 Accomplishments:

Supported Air Force Development efforts on CSEL program 185 185

Total

FY 1997 Planned Program:

- Support Air Force Development efforts on CSEL program 529 13 542
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)

Total

FY 1998 Planned Program:

Support Air Force Development efforts on CSEL program 508 508

Total

FY 1999 Planned Program:

Support Air Force Development efforts on CSEL program

506 506 Total

Project D098

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Exhibit R-2 (PE 0604805A)





RDT&E BUDGET ITEM JUS	EM JUST	TIFICATION SHEET (R-2 Exhibit)	ION SH	IEET (R	-2 Exhil	bit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopme	int	PE NU 060 4	PE NUMBER AND TITLE 0604805A Com Systems - Engir	пт∟Е ommand ngineerir	A Command, Control, Comn - Engineering Development	I, Comm opment	PE NUMBER AND TITLE 0604805A Command, Control, Communications Systems - Engineering Development		PROJECT D098
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request		FY 1996 189 191 -6 185	FX	FY 1997 569 542 542	FY 1998 531 508	<u>FY 1999</u> 529 506	999 529 506		_	
C. Other Program Funding Summary ARMY, OPA2 B03200, Combat Survivor Evader Locator (CSEL)	FY 1996	FY 1997	<u>FY 1998</u> 5677	<u>FY 1999</u> 14019	<u>FY 2000</u> 19164	FY 2001 7383	<u>FY 2002</u> 7396	FY 2003 7424	To Compl 14624	Total Cost 75687
D. Schedule Profile CSEL Program, Milestone I CSEL Program Milestone III	FY 1996 2 3 X*	4	1 2 FY	FY 1997 2 3	4 ×	FY 1998	3 8 8 4	- ~	FY 1999 2 3	4
Project D098	:	Р	Page 6 of 19 Pages	7 Pages			Exhibit	Exhibit R-2 (PE 0604805A)	04805A)	
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RDT&E PROGRAM ELEMENT/PROJE	PROJECT COST BREAKDOWN (R-3)	REAKD	OWN (R-	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AN 0604805A Systems -		nand, Con eering Dev	PE NUMBER AND TITLE 0604805A Command, Control, Communications Systems - Engineering Development	nunicatio		РКОЈЕСТ D098
A. Project Cost Breakdown Support Air Force Development efforts on CSEL program SBIR/STTR	FY 1996 FY	FY 1997 529 13	FY 1998 508	FY 1999 506			
Total	185	542	208	909			
B. Budget Acquisition History and Planning Information							
Contractor or Contract Government Method/Type Award or Performing Project Performing or Funding Obligation Activity Office	ct Total	FY 1996	FY 1997	FV 1998	FY 1999	Budget to Complete	Total
Development Organizations: None and Management Organizations TR Tr Force on		185	13 529	508	506	0	13 4721
CSEL Test and Evaluation Organizations: None							
Government Furnished Property: None							
Subtotal Product Development Subtotal Support and Management	2993	185	542	208	909		4734
Subtotal Test and Evaluation Total Project	2993	185	542	508	909		4734
							···
Project D098	Page 7 of 19 Pages	ges		Exhi	Exhibit R-3 (PE 0604805A))604805A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	LEM JUS	TIFICA	TION S	HEET (R	R-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Developm	ent	PE NI 060	PE NUMBER AND TITLE 0604805A Com! Systems - Engir	PENUMBER AND TITLE O604805A Command, Control, Comm Systems - Engineering Development	d, Contro ng Devel	I, Comm opment	ENUMBER AND TITLE 1604805A Command, Control, Communications Systems - Engineering Development		РРОЈЕСТ D282
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D282 SINCGARS-V Engineering Development	7189	6883	0	0	0	0	0	0	0	19897

Airborne Battlefield Combat Identification System (BCIS), Forward Error Correction (FEC) (data transmission enhancement techniques), improved data capability, weight implementation of overall product improvements to the SINCGARS Combat Net Radio. Product improvements included are Global Positioning System (GPS) interfaces, reduction (to include an Alternate Configuration Receiver Transmitter, Battery Box and Vehicular Appliqué), MANPRINT (ease of operations), vehicular system reengineering, improved electronic counter-counter measure (ECCM) performance and switched system dial-up interfacing. Program provides simplified operations, A. Mission Description and Budget Item Justification: Project D282 - SINCGARS-V Engineering Development: This program provides for analysis and improved performance of existing capabilities, new operational capabilities and reduced life cycle costs. Acquisition Strategy: The Alternate Configuration Receiver-Transmitter and associated items development design products may be used by competitive producers as a part of the anticipated FY 97 production competition of the SINCGARS radio.

FY 1996 Accomplishments:

- Airborne BCIS Demonstration
- Initiated development effort for ITT SIP Alternate Configuration Radio
 - initiated development effort for GD SIP Alternate Configuration Radio
 - Program Management Support
- Handheld SINCGARS Radio TF XXI Support
 - 1500 7189

Total

FY 1997 Planned Program:

- Complete development effort for ITT SIP Alternate Configuration Radio 3225
 - Complete development effort for GD SIP Alternate Configuration Radio 3225
- Complete design verification testing/demonstrations for both ITT and GD Alternate Configuration Radio
 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)
 - 6883

FY 1998 Planned Program: Project not funded in FY 98

Project D282

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Exhibit R-2 (PE 0604805A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUST	LIFICAT	ION SH	IEET (R	-2 Exhit	oit)		DATE Feb i	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developme	int	PE NU 060	PE NUMBER AND TITLE 0604805A Com Systems - Engir	PE NUMBER AND TITLE 0604805A Command, Control, Comn Systems - Engineering Development	, Contro	I, Comm	PE NUMBER AND TITLE 0604805A Command, Control, Communications Systems - Engineering Development		PROJECT D282
FY 1999 Planned Program: Project not funded in FY 99	1 FY 99									
B. Project Change Summary FY1997 President's Budget Appropriated Value Adjustments to Appropriated Value		FY 1996 7191 7264 -75	FY	FY 1997 7031 6883	FY 1998 0	FY 1999 0	<u>66</u>			
FY 1998 Pres Bud Request		7189		6883	0		0			
C. Other Program Funding Summary Army, OPA2 SSN:B00500 Army, OPA2 SSN:J30500 Army, OPA2, SSN:Z16800	FY 1996 331082 12366 13705	FY 1997 293989 12102 13539	FY 1998 280925 9239 0	FY 1999 13507 0	FY 200 <u>0</u> 13892 0	FY 2001 0 0	FY 2002 0 0 0	FY 2003 0 0	To Compl	Total Cost Cont Cont
D. Schedule Profile	FY 1996	-	FY.	FY 1997	,	FY 1998		· .	Y 199	
Award Alternate Configuration X* Development Contracts ECP Cut In to Airborne Production Exercise Alternate Configuration Dev Contr Opt	~	1	* *	n	4	Ν	ى 4	7	n	4
* Milestone completed										
Project D282		7	Page 9 of 19 Pages) Pages			Exhibit	Exhibit R-2 (PE 0604805A)	04805A)	
			000							14-11

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RDT8	E PROG	RDT&E PROGRAM ELEMENT/	EMENT/PR	SJECT (SOST BI	REAKDO	PROJECT COST BREAKDOWN (R-3)	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	and Manui	facturing C)evelopment		PE NUMBER AND TITLE 0604805A Com Systems - Engir	RAND TITLE 5A Comm s - Engine	ıand, Con≀ ≀ering Dev	D TITLE Command, Control, Communications Engineering Development	nunicatio		РRОЈЕСТ D282
A. Project Cost Breakdown Contractor Engineering Development Test & Evaluation SBIR/STTR Total	<mark>kdown</mark> g yaluation			EY 1996 6424 765 7189	EX	EY 1997 6450 265 168 6883	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information	n History and	Planning Infe	<u>ormation</u>								
Performing Organizations Contractor or Contra Government Metho Performing or Fun Activity Vehicl	ations Contract Method/Type or Funding	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations SBIR/STTR ITT Ft. Wayne, IN SS/CPFF GD Tallassee, FL SS/CPFF ITT Ft. Wayne, IN SS/CPFF	rt Organization SS/CPFF SS/CPFF	ns Oct 94 Dec 94 Jan 95	3829 6300 7455	3829 6300 7455	3821 300 1500	8 2775 2730	168 0 3225 3225			000	168 3829 6300 7455
Support and Management Organizations: Misc. Tast and Evaluation Organizations	ement Organiz TBD Organizations	ations: Dec 94	1115	1115	204	911	0			0	1115
EPG, MD	MIPR	Jan 96	1030	1030	0	765	265			0	1030
Government rurnished rroperty: Notice Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	eu rroperty: lopment Aanagement uation	NOTE OF THE PROPERTY OF THE PR			5621 204 5825	5513 911 765 7189	6618 265 6883				17752 1115 1030 19897
Project D282				Page	Page 10 of 19 Pages	ges		Exhil	Exhibit R-3 (PE 0604805A)	0604805A)	
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RDT&E BUDGET ITEM JUS	EM JUS	STIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	१-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Developm	lent	PE NI 060	PE NUMBER AND TITLE 0604805A Command, Control, Comn Systems - Engineering Development	ππιε Sommanα ingineerii	հ, Contro ng Devel	I, Comm opment	PENUMBER AND TITLE 0604805A Command, Control, Communications Systems - Engineering Development		РКОЈЕСТ D485
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D485 C4I Interoperability Standardization and Certification	1892	471	3205	5078	5419	4786	4550		4405 Continuing Continuing	Continuing

oint/Allied Configuration Management Process. This project also includes the development, configuration management of two key elements of the Army/Joint Technical Architectures - Variable Message Format and MIL-STD-188-220A standards suites, that are required for successful Force XXI and Joint Exercises. The Digital Integrated A. Mission Description and Budget Item Justification C4I Interoperability Standardization and Certification: The Army Enterprise Strategy, DOD 4630.5, DODI Lab (DIL) has been adopted by the Army leadership for Force XXI to evaluate system's interoperability and identify interoperability issues early on in system design to interoperability standards and specifications. Direct the integration of the Army systems' requirements and operational concepts documents with the joint standards and interoperability assessments, certification recommendations, and test reports. The DIL facilitates engineered solutions by replicating digital battlefield environments to support Advanced Technology Demonstrations, Advanced Warfighting Experiments, and realistic evaluation of new tactics, doctrine and operational concepts. It is the 4630.8, C4I for the Warrior, and CJSCI 6212.01, mandate the establishment and sustainment of interoperability between Army C4I systems, and within the Army and Joint/Allied C4I communities. This includes operation of the Army board to synergize and integrate the Army's interoperability certification testing and analysis, and interface documents. Included is the Army's participation in Joint/Allied and intra-Army interoperability certification testing and the Army's representation in the provide the material developer with opportunities to modify and adjust the system without major programmatic impacts. The DIL performs protocol conformance, interoperability and certification testing for the Army's Force XXI battlefield digitization effort; it tests equipment and identifies interoperability issues, develops configuration management functions. Provide the Army focal point for the review, staffing, coordination and development of Army positions for the interface fundamental component for systems engineering and integration to optimize the evolution of architectures and systems for the digital battlefield.

Acquisition Strategy: The efforts funded within this project are non-system specific, therefore no Acquisition Strategy is provided

FY 1996 Accomplishments:

- Represented Army in 12 Army/Joint configuration control boards
- Maintained Army Five Year Master Test Schedule
- Army participation in 11 Joint Certification Tests of 25 systems 300
- Represented Army in 6 Joint Analysis Review Panels for 25 systems 200
- Developed/deployed VMF Test Tool Build-1 (initial capability) 626
- Developed/deployed 188-220 Tester Build -0.1 (initial Monitor/Decode)

Project D485

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Exhibit R-2 (PE 0604805A)





	RDT&E BUDGET ITEM JUSTIFICATIO	TIFICATION SHEET (R-2 Exhibit)	R-2 Exhibi		DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering	вирсет астіміту 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604805A Com Systems - Engir	o ⊤i⊤∟E Command, Engineering	PE NUMBER AND TITLE 0604805A Command, Control, Communications Systems - Engineering Development	nications	РКОЈЕСТ D485
FY 1997 Planned Program: • 409 Repress • 50 Maintai • 12 Small E Total 471	ogram: Represent Army in 12 Army/Joint configuration control boards Maintain Army Five Year Master Test Schedule Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)	oards mology Transfer (SI	3IR/STTR)			
FY 1998 Planned Program:	ogram: Force XXI DIL Interoperability Certifications for C4I/EW systems for field use and Battlelab evaluations and experimentation Army Force XXI and Joint VMF Standards Development, improvement, test and analysis Army Force XXI and Joint 188-220A Standards Development, improvement, test and analysis	V systems for field u, improvement, test	se and Battlelab and analysis test and analysis	evaluations and experin	nentation	
FY 1999 Planned Program:	ogram: Force XXI DIL Interoperability Certifications for C4I/EW systems for field use and Battlelab evaluations and experimentation Army Force XXI and Joint VMF Standards Development, improvement, test and analysis Army Force XXI and Joint 188-220A Standards Development, improvement, test and analysis TADIL & USMTF standards Army/Joint CM process TADIL & USMTF Joint Certification Testing	/ systems for field u , improvement, test . ment, improvement,	se and Battlelab and analysis test and analysis	evaluations and experin	nentation	
B. Project Change Summary FY1997 Presidents Budget Appropriated Value Adjustments to Appropriated Value	Summary FY 1996 Budget 484 489 489 opriated Value 1403	FY 1997 481 471	FY 1998 481	FY 1999 480		
F Y 1996 Fres Bud Request Change Summary Explanation: Funding: FY1996/FY1 (FY 96 +140	998/FY1999 - Funding reprogrammed to 3, FY 98 +2724, FY 99 +4598)	47.1 rt Force XXI and Jo	5205 int /Allied Digiti:	zation Exercises		
Project D485	Pa	Page 12 of 19 Pages 1001		Exhibit	Exhibit R-2 (PE 0604805A)	() Item 99

RDT&E PROGRAM ELEMENT/PROJ	ECT CO	ROJECT COST BREAKDOWN (R-3)	JOWN (R-3)	DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE S. S.	PE NUMBER AND TITLE 0604805A Command, Control, Communications Systems - Engineering Development	≣ nmand, Conti ineering Deve	rol, Comme elopment	unications	Р R ОЈЕСТ D485
Cost Breakdown Engineering Support Angineering Support	FY 1996 170 1652 70	FY 1997 459	FY 1998 1054 2151	FY 1999 1923 3155		
SBIR/STTR Total	1892	12 471	3205	5078		
B. Budget Acquisition History and Planning Information: Not applicable	ıble					

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Project D485

Exhibit R-3 (PE 0604805A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	STIFICA	TION S	HEET (F	k-2 Exhi	bit)		DATE Fet	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Jevelopm	nent	PE N 06(Sy:	PE NUMBER AND TITLE 0604805A Command, Control, Communications Systems - Engineering Development	тпс Sommanc Ingineerii	d, Contro ng Devel	l, Comm opment	unication		РRОЈЕСТ D488
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
					İ					

A. Mission Description and Budget Item Justification: Tactical Net Radio Communications: Develops the Frequency Hopping Multiplexer (FH MUX) which allows Army's gateway to interoperability test network for certification of Army C3I systems. Develops Wireless Network Access (WNA) to provide communications interface to multiple radios to operate on one antenna for reduced visual signature and rapid transportability and set-up. Performs procedural interoperability testing and provides the CHS host computers and transmission security for tactical operations. Provide for executive agent and requirements for test and evaluation of the Joint Task Force Communications Planning and Management System.

3384

D488 Tactical Net Radio Communications

0 Continuing Continuing

Applications for antenna technology will focus on developing wideband HF and VHF antennas which are structurally embedded in the airborne or ground mobile platform. The Frequency Hopping Multiplexer (FH MUX) preproduction hardware fabrication was finalized in FY 96 with emphasis on models and qualification testing. In support of Task Force XXI (TF XXI) analyses will be performed to mitigate co-site interference amongst various radios and frequency allocations assigned. Support will focus on Future Data Radio [FDR/Near-Term Digital Radio (NTDR)] will be added into the Digital Integrated Lab (DIL) network, for demonstration and experimentation purposes. communication systems engineering of tactical radios to mitigate platform interference and provide for maximum communication ranges. The CECOM Mobile Test Van will be upgraded to provide for integration of evolving technologies. Efforts to establish an EMI/EMC co-site testbed and audio technology facility will be initiated.

Acquisition Strategy: The acquisition strategy for the FH MUX is to award a sole source contract for up to 50 FH MUX Pre-Production Qualification Test (PPQT) model units to Xetron Corporation, Cincinnati, OH, the current developer of the FH MUX. This contract was an essential preparatory phase to the planned full rate production contract awarded in 3QFY96 and provided substantial reduction in production risk.

FY 1996 Accomplishments

- Program Management, design review, test & evaluation, data support for Pre-production Qualification Testing (PPQT) for the FHMUX FH MUX Preproduction Hardware Fabrication
 - Developed application of land and airborne structurally embedded antennas 420
- Integration of FDR to NTDR into DIL 704
 - initiated audio lab upgrade
 - Initiated Co-site EMI/EMC testbed 100 370 100
- Mobile test van upgrades & equipment integration
 - factical Radio integration support to TF XXI 220
- Frequency allocation & co-site analysis support to Task Force XXI 200
 - Enhanced testing of interference cancellation technologies at EPG

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Exhibit R-2 (PE 0604805A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhib		DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604805A Command, Control, Comn Systems - Engineering Development	D TITLE Command, Control, Communications Engineering Development	ınications	РРОЈЕСТ D488
FY 1997 Planned Program: Project not funded in FY 97				
FY 1998 Planned Program: Project not funded in FY 98				
FY 1999 Planned Program: Project not funded in FY 99				
B. Project Change SummaryFY 1996FY1997 Presidents Budget3465Appropriated Value3501Adjustments to Appropriated Value-117FY 1998 Pres Bud Request3384	EY 1997	FY 1999		
C. Other Program Funding Summary. FY 1996 FY 1997 FY	FY 1998 FY 1999 FY 2000	FY 2001 FY 2002	To FY 2003 Compl	To Total
35699	0 0 0			5
D. Schedule Profile FY 1996	FY 1997	FY 1998	FY 1999	_
	· ×	ח		•
* Milestone has been completed				
			·	
Project D488	Page 15 of 19 Pages	Exhibit	Exhibit R-2 (PE 0604805A)	-
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RDT&E PROGRAM ELEMENT/PROJEC	PROJECT COST BREAKDOWN (R-3)	DOWN (R-3)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604805A Com Systems - Engir	PE NUMBER AND TITLE 0604805A Command, Control, Communications Systems - Engineering Development	PROJECT PROJECT D488
A. Project Cost Breakdown Contractor Engineering Support Development Test and Evaluation Government Engineering Support Miscellaneous Total	FY 1996 1150 617 1596 21 3384	FY 1998 FY 1999	
B. Budget Acquisition History and Planning Information: Not applicable	•		
Project D488	Page 16 of 19 Pages	Exhit	Exhibit R-3 (PE 0604805A)
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA.	IS NOIL	HEET (R	-2 Exhil	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developm	ent	PE N 06(PE NUMBER AND TITLE 0604805A Command, Control, Communications Systems - Engineering Development	пт <u>г</u> Sommanc ngineerir	l, Contro ng Devel	I, Commo	unication		РRОЈЕСТ D589
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D589 Army Systems Engineering & Warfighting Technical Support	0	0	3161	6537	7824	6062	8128	8014	8014 Continuing Continuing	Continuing

disciplined, highly technical, non-parochial, Army-level expertise in both System Engineering and Technical Architecture (TA) matters as directed by the Army Acquisition technologies (ATDs, ACTDs, other services and commercial) and documentation to achieve the technical evolution to a joint interoperable architecture and to achieve rapid acquisition for fielding to Force XXI. Provides analysis and hands-on support to the warrior, by supporting development of the operational architecture and implementing development and implementation of the ATA under this project are critical path elements to achieve the Army's Force XXI digitization mission, provide the ability to fight Executive (AAE) and Vice Chief of Staff of the Army (VCSA). The Army Technical Architecture (ATA) provides the 'building code" foundation for designing, building, and win on tomorrow's battlefield, and assure compatibility with both Joint and Coalition Warfighters. It provides for integration of emerging technologies to support the next generation of digitization across all battlefield operating systems for the 21st century. It provides essential technical expertise and planning for integration of new A. Mission Description and Budget Item Justification: Army Systems Engineering & Warfighting Technical Support: This project provides essential, multifielding, and supporting interoperable systems in an expedient and cost-effective manner. The Army System Engineer's (ASE's) work efforts associated with the new C4I Warrior information technologies.

Acquisition Strategy: The efforts funded in the project are non-system specific, therefore no acquisition strategy is provided.

FY 1996 Accomplishments: Project not funded in FY 96

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program:

- Conduct major design evaluations of Army systems for ATA Interoperability Compliance
- Ensure ATA Interoperability Implementation through IPT/Contract actions and assess the ATA compatibility of Army Science and Technology 1212
 - Programs
- Maintain existing ATA Information Technology Standards
- Technically influence the development and implementation of the Joint Command, Control, Communications and Computer Intelligence TA

Project D589

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Exhibit R-2 (PE 0604805A)





RD	RDT&E BUDGET ITEM JUSTIFICATIO	TIFICATION SHEET (R-2 Exhibit)	R-2 Exhibi	DATE	February 1997
вирдет Астіліту 5 - Engineering a ı	вироет астіvіту 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604805A Com Systems - Engir	TITLE Command, Engineering	PE NUMBER AND TITLE 0604805A Command, Control, Communications Systems - Engineering Development	PROJECT S D589
FY 1999 Planned Program: • 1978 Expand • 505 Assess • 573 Investi • 401 Assess • 391 Assess • 495 Techni • 514 Provide Total 6537	Expand major ATA Compliance design evaluations to encompass both interoperability and standardization (SW Reuse) Extend coverage of IPTs/Contract Actions participation to all critical Army systems to ensure ATA Implementation Assess ATA compatibility of all major Army S&T Programs Investigate the maturity of emerging, complex, multi-discipline information technology standards for inclusion in the ATA Assess suite of ATA interoperability protocols selected by the Weapons and M&S communities Assess System ATA Implementation Schedules for Army Interoperability Synchronization Technically influence the extension of the Joint Technical Architecture (JTA) to non-C4I systems Technically influence commercial and international standards forums Provide integration of new technologies for emerging systems into joint interoperable Force XXI architecture in support of Battlefield Operating Systems for the 21st century.	mpass both interoill critical Army systs solution information to the Weapons and Materoperability Systrohitecture (JTA) ds forums ns into joint intero	perability and stanstems to ensure schnology stands A&S communities to non-C4I systepperable Force X	ndardization (SW Reuse) ATA Implementation ards for inclusion in the ATA ss ms XI architecture in support of Battle	field Operating
B. Project Change Summary FY1997 Presidents Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	Imary FY 1996 get 0 ated Value 0 est 0	FY 1997 0 0	FY 1998 0 3161	FY 1999 0 6537	
Change Summary Explanation: Funding: FY98/FY99	Summary Explanation: Funding: FY98/FY99 Increase as a result of priority associated with support for Army Technical Architecture (FY 98 +3161, FY 99 +6537)	oort for Army Tecl	ınical Architectu	re (FY 98 +3161, FY 99 +6537)	
Project D589	Page	Page 18 of 19 Pages		Exhibit R-2 (PE 0604805A)	04805A)
		1007			Item 99

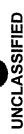
RDT&E PROGRAM ELEMENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	JOWN (R-3)		DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604805A Command, Control, Comm Systems - Engineering Development	STITLE Command, Control, Communications Engineering Development	ol, Commi	ınications	РКОЈЕСТ D589
 A. Project Cost Breakdown Government Engineering Government Engineering Contractual Engineering Technical Studies/Technology Evaluations Training Training Travel Total B. Budget Acquisition History and Planning Information Not applicable 	-i	FY 1998 1931 930 0 210 3161	FY 1999 2414 3271 542 20 290 6537		

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Project D589

Exhibit R-3 (PE 0604805A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION S	JEET (F	१-2 Exhi	bit)		DATE Fe	February 1997	997
вирсет Астипт 5 - Engineering and Manufacturing Development	Developm	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604807A Medi Development	ппсе Medical N nt	lateriel -	ре number and тiтle 0604807A Medical Materiel - Engineering Development	ring		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	4644	4693	4483	5408	6209	6369	7875	8544	Continuing	Continuing
D812 Military Human Immunodeficiency Virus (HIV) Vaccine and Drug-Engineering Development	189	189	0	306	1454	1375	1815	1774	Continuing	Continuing
D832 Combat Medical Materiel-Engineering Development	1508	1659	2346	2420	2363	2329	3307	3477	Continuing	Continuing
D834 Soldier System Protection-Engineering Development	854	865	931	941	925	915	1159	1950	Continuing	Continuing
D849 Infectious Disease Drug and Vaccine- Engineering Development	2093	1980	1206	1741	1767	1750	1594	1343	Continuing	Continuing

Research and Materiel Command. The projects in this program element support research efforts in the engineering and manufacturing development phase of the acquisition essential to counteracting lethal and human performance degrading effects of infectious diseases, and (2) medical equipment essential to meeting medical requirements on delivery, intensive care evacuation platforms, and rapidly mobile, lightweight surgical facilities and equipment. Additionally, the program element funds engineering and materiel may be procured for exploitation of advanced technology and development to meet Army medical defense goals. This program element supports the full-scale development of vaccines, prophylactic and therapeutic drugs, resuscitation fluids and drug products for Acquired Immune Deficiency Syndrome (AIDS). This program performance. This includes engineering development of vision corrective devices for protective masks. This program is primarily managed by the U.S. Army Medical the integrated battlefield, with emphasis on decreased size/weight and high mobility, yet supporting large numbers of combat casualties. Additionally, foreign medical Mission Description and Budget Item Justification: This engineering and manufacturing development program funds: (1) improved medical equipment and drugs funds engineering and manufacturing development for both large and small Combat Casualty Care end items for location of casualty, diagnosis, rapid intensive care manufacturing development of medical equipment which provides protection against physiological, psychological or environmental factors which degrade physical cycle and are therefore correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604807A)

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RDT&E BUDGET ITEM JUS	FEM JUS	TIFICA	TION S	TIFICATION SHEET (R-2 Exhibit)	R-2 Exhi	bit)		DATE Fe	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developm	ent	PE N 06(PE NUMBER AND TITLE 0604807A Medical Materiel - Engineering Development	ттге Medical N nt	lateriel -	Enginee	ring		PROJECT D812
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D812 Military Human Immunodeficiency Virus (HIV) Vaccine and Drug-Engineering Development	189	. 189	0	306	1454	1375	1815	1774	1774 Continuing Continuing	Continuing

A. Mission Description and Justification: This project funds Congressionally mandated, militarily relevant HIV medical countermeasures. This provides for engineering and manufacturing development of sufficient candidate vaccines and drugs to permit large-scale field testing and education/training materials. Efforts are directed to answer militarily unique needs affecting manning, mobilization and deployment. The major contractor is Henry M. Jackson Foundation for the Advancement of Military Medicine, Rockville, MD.

Acquisition Strategy: Test and evaluate commercially developed vaccine candidates in government-managed trials.

FY 1996 Accomplishments:

- Characterized cohorts for a Phase III test of a vaccine to prevent infection with HIV. 95 94 189
- Conducted Phase I trials to evaluate vaccine products for transitioning to Phase III.

Total

FY 1997 Planned Program:

- Develop and prepare cohorts for a Phase III test of a vaccine to prevent infection with HIV. 92
- Conduct additional Phase I trials and begin Phase II trials and selected products to evaluate vaccine products for transitioning to Phase III.
 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total

FY 1998 Planned Program: Project not funded in FY 98.

FY 1999 Planned Program:

- Develop cohorts for Phase III trial. 106
- Conduct Phase II trial necessary for transition of HIV vaccines to Phase III trials. 200 306

Total

Project D812

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Exhibit R-2 (PE 0604807A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ATION SHEET	(R-2 Exhibit)	DATE Fet	February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604807A Medi Development	PE NUMBER AND TITLE 0604807A Medical Materiel - Engineering Development	- Engineering	РВОЈЕСТ D812
B. Project Change SummaryFY 1996FY 1997 President's Budget193Appropriated Value199Adjustments to Appropriated Value-10FY 1998 Pres Bud Request189	996 EX 1997 193 193 199 189 -10 189 189	FY 1998 FY 288	EY 1999 288 306	
Change Summary Explanation: Funding: FY 1998: Funds reprogrammed (-288) to higher priority requirements. C. Other Program Funding Summary: Not Applicable.	l (-288) to higher priorit	y requirements.		
D. Schedule Profile: Multiple medical developmental products will advance through the various events throughout the FY.	nce through the various	events throughout the FY	٠;	
Project D812	Page 3 of 15 Pages		Exhibit R-2 (PE 0604807A)	604807A)

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT C	OST BR	EAKD	OWN (R-	3)	DATE F	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	<u> </u>	PE NUMBER AND TITLE 0604807A Medi Development	AND TITLE A Medic nent	al Materie	∍e number and ⊤iт∟e 0604807A Medical Materiel - Engineering Development	1	1	РRОЈЕСТ D812
A. Project Cost Breakdown Test & Evaluation Product Development Project Management Total	FY 1996 189 0 0 189	EY 1997 189 0 0 0	997 189 0 0 189	FY 1998 0 0 0	FY 1999 306 0 0 306			
g Information r Performing on Activity EAC	Project Office EAC F	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Product Development Organizations: None Support and Management Organizations USAMMDA Contracts Test and Evaluation Organizations Army Laboratories Contracts H.M. Jackson Agreement Foundation Agreement	125000	38042	0 0 0 189	0 0 0 0 189	00 000	0 0 0 306	0 0 0 0 Cont	38726
Government Furnished Property: None. Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		38042	189	189		306		38726 38726
Project D812	Page 4	Page 4 of 15 Pages	53		Exhi	Exhibit R-3 (PE 0604807A)	0604807A)	





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION S	HEET (F	र-2 Exhi	bit)		DATE Fe	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Developm	ent	PE N 06(PE NUMBER AND TITLE 0604807A Medical Materiel - Engineering Development	ттге Medical N nt	fateriel -	Enginee	ring		PROJECT D832
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D832 Combat Medical Materiel-Engineering Development	1508	1659	2346	2420	2363	2329	3307	3477	3477 Continuing Continuing	Continuing

A. Mission Description and Justification: This project supports engineering and manufacturing development to field new and improved medical materiel essential for combat casualty care to reduce logistical support requirements and minimize loss from duty rates. The major contractor is the United Defense Limited Partnership, San Jose, CA.

Acquisition Strategy: Test and evaluate commercially developed materiel for hardening or other modification in government managed trials.

FY 1996 Accomplishments:

- Reviewed commercial progress of Hypertonic Saline Dextrane with FDA.
 - Fabricated armored ambulance prototype and prepared specifications.
- Supported the engineering development and user evaluation of telemedicine hardware and concepts for the treatment of combat casualties.
 - Conducted technical and user evaluations of the intraosseous infusion device.
 - 1508 Total

FY 1997 Planned Program:

- Transition Hypertonic Saline Dextran to procurement.
- Conduct technical and user evaluations of Engineering Design Model of armored treatment vehicle.
- Support the engineering development and user evaluations of telemedicine hardware and concepts for the treatment of combat casualties. 286 1250
 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs. 40

Project D832

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Per Number Act	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibi	t)	DATE February 1997	1997
164 Continue development and technical testing of the portable field oxygen concentrator. 200 Patiental Movement Indian Testing and Military Laboratories. 201 AITU medical integration costs onto C2V platform, IOT&E. 225 NDU User Testing of Medical Equipment. 236 AZTEC Advanced Technology Demonstration Quantico and Fort Brags. 237 Annied User Assessment Testing LSTAT. 232 Complete development; secure air worthiness certification of the portable field oxygen concentrator. 232 Complete development; secure air worthiness certification of the Amored Treatment Vehicle. 243 Africal Easting LSTAT. 240 Esting LSTAT. 240 Esting LSTAT. 240 Esting LSTAT. 240 Issue Sommary 240 Esting LSTAT. 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 241 Issue Submary 242 Issue Submary 243 Issue Submary 244 Issue Submary 245 Issue Submary 246 Issue Submary 247 Issue Submary 248 Issue Submary 248 Issue Submary 249 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary 240 Issue Submary: Not Applicable. 241 Issue Submary 242 Issue Submary 243 Issue Submary: Not Applicable. 244 Issue Submary 245 Issue Submary: Not Applicable.	вирдет АСТІVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND 0604807A Developme	o Title Medical Ma ≱nt	teriel - Engin	ıeering	РРОЈЕСТ D832
nucle Program: 222 Complete development; secure air worthiness certification of the portable field oxygen concentrator. 910 Conduct user testing and integration of the Armored Treatment Vehicle. 911 Conduct operational testing and begin Low Rate Initial Production of MEDITAG. 912 Conduct operational testing and begin Low Rate Initial Production of MEDITAG. 913 Conduct operational testing and begin Low Rate Initial Production of MEDITAG. 914 Segin 10T& E testing LSTAT. 915 EX 1992 EY 1992 EY 1992 EY 1992 EY 1992 EY 1992 EY 1992 EY 1992 EY 1992 EY 1992 EY 1992 EX 1892 EX 1892 EX 1892 EX 1892 EX 1892 EX 1892 EX 1893 E	FY 1998 Planned Program: 464 Continue development and technical testing of the portabl 200 Patient Movement Item Testing at Military Laboratories. 763 ATTV medical integration costs onto C2V platform, IOT8 275 NDI User Testing of Medical Equipment. 350 AZTEC Advanced Technology Demonstration Quantico a 294 Limited User Assessment Testing LSTAT. Total	e field oxygen conc &E. ınd Fort Bragg.	entrator.			
hange Summary FY 1996 FY 1997 FY 1992 FY 1999 vidue 1546 1659 1736 1852 Value -82 1659 2346 2420 Bud Request 1508 1659 2346 2420 nary Explanation: ning: FY98: Funds reprogrammed (568) into this project for the ATV. FY99: Funds reprogrammed (568) into this project for the ATV. ATV. ggram Funding Summary: Not Applicable. Exhibit R-2 (PE 0604807A)	FY 1999 Planned Program:	of the portable fiel ment Vehicle. oduction of MEDIT	d oxygen concer 'AG.	itrator.		
Bud Request Bud Request Bud Request Bud Request Bud Request 1508 1659 2346 2420 Santa Explanation: In Stribit Reserved and the ATV. FY99: Funds reprogrammed (568) into this project for the ATV. FY99: F	Summary Budget	<u>FY 1997</u> 1695 1659	FY 1998 1736	<u>FY 1999</u> 1852		
ing: FY98: Funds reprogrammed (610) into this project for the ATV. FY99: Funds reprogrammed (568) into this project for the ATV. gram Funding Summary: Not Applicable. Page 6 of 15 Pages Exhibit R-2 (PE 0604807A)		1659	2346	2420		
ogram Funding Summary: Not Applicable. Page 6 of 15 Pages Exhibit R-2 (PE 0604807A)	Change Summary Explanation: Funding: FY98: Funds reprogrammed (610) into this project for the A' FY99: Funds reprogrammed (568) into this project for the A'	IV.				•
Page 6 of 15 Pages	C. Other Program Funding Summary: Not Applicable.					
Page 6 of 15 Pages Exhibit R-2 (PE 0604807A)						
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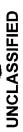




RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604807A Medical Materiel - Engineering Development	
 D. Schedule Profile: Multiple medical developmental products will advance through the various events throughout the FY 196 FY 1996 FY 1997 FY 19 /ul>	e through the various events throughout the FY FY 1997 FY 1998 1 2 3 4 1 2 3 4	FY 1999 1 2 3 4
Field Medical Oxygen Generation and Distribution System MLST 3 Intraosseous Infusion Device MLST 3 Hypertonic Saline Dextran MLST 3 Field Anesthesia Machine MLST 1 MLST 2 Life Support Trauma and Transport System MLST 2 MLST 3 Armored Transport and Treatment Vehicle MLST 3 ArmST 1/2 MLST 1/2	× × × × ×	× × ×
Project D832	Page 7 of 15 Pages	Exhibit R-2 (PE 0604807A)
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT COST	BREAKD	OWN (R-	3)	DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUME 06048 Devel	PE NUMBER AND TITLE 0604807A Medical Materiel - Engineering Development	al Materie:	l - Engine	ering	a O	РRОЈЕСТ D832
A. Project Cost Breakdown Test and Evaluation Product Development Program Management Total	FY 1996 615 690 203 1508	FY 1997 1334 61 264 1659	FY 1998 607 1407 332 2346	FY 1999 626 1064 730 2420			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Total Office Prior to EAC FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Contracts		069	61	1407	1062	Cont	3220
Support and Management Organizations USAMMDA Contracts		94	176	291 41	227 505	Cont	788
Test and Evaluation Organizations Army Laboratories		615	1334	209	979	Cont	3182
Government Furnished Property: None Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		690 203 615 1508	61 264 1334 1659	1407 332 607 2346	1062 732 626 2420		3220 1531 3182 7933
Project D832	Page 8 of 15 Pages	^p ages		Exhi	Exhibit R-3 (PE 0604807A)	0604807A)	
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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SI	HEET (F	१-2 Exhi	bit)		DATE Fe	February 1997	266
BUDGET ACTIVITY 5 - Engineering	вироет астіvіту 5 - Engineering and Manufacturing Developm	evelopm	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604807A Medi Development	ттге Medical N nt	PE NUMBER AND TITLE 0604807A Medical Materiel - Engineering Development	Engineel	ring		PROJECT D834
Ö	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D834 Soldier System Development	Soldier System Protection-Engineering Development	854	865	931	941	925	915	1159	1950	Continuing	Continuing
A. Mission Descrip tools, to provide prot environmental condii environmental and pl	A. Mission Description and Justification: This project supports engineering development of preventive medicine materiel, including devices, pharmacologicals and other tools, to provide protection, sustainment, and enhancement of the physiological and psychological capabilities of soldiers in the face of combat operations under all environmental conditions. Focus is on reduction in the incidence of personnel losses due to preventable disease and non-battle injuries through development of environmental and physiological performance monitors and other preventive medicine countermeasures. A major contractor is Stanford Research Institute, Palo Alto, CA.	roject suppor cement of the the incidence tors and othe	ts engineeri physiologi of personn r preventive	ng developm cal and psyc el losses due medicine co	nent of preve hological ca to preventa ountermeasu	ntive medicipabilities of ble disease a res. A major	ine materiel, soldiers in the and non-battl r contractor i	including d ne face of co e injuries thu is Stanford F	evices, phari mbat operat ough devek tesearch Insi	macologicals ions under al opment of titute, Palo A	and other 1 Ito, CA.
Acquisition Strateg	Acquisition Strategy: Test and evaluate commercially developed materiel for hardening or other modification in government managed trials.	ılly develope	d materiel f	or hardening	or other mo	dification in	government	managed tr	ials.		
FY 1996 Accomplishments: • 854 Suppor	hments: Supported the engineering development and user evaluation of telemedicine hardware and concepts for soldier protection.	/elopment an	d user evah	ation of tele	medicine ha	ırdware and ı	concepts for	soldier prot	ection.		
FY 1997 Planned Program: • 844 Support • 21 Small E Total 865	rogram: Support the engineering development and user evaluation of telemedicine hardware and concepts for soldier protection. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.	opment and search/Small	user evaluat Business T	ion of teleme echnology T	edicine hard ransfer (SB)	user evaluation of telemedicine hardware and concepts fo I Business Technology Transfer (SBIR/STTR) Programs.	ncepts for so ograms.	ldier protect	ion.		
FY 1998 Planned Program: • 931 Conduc	rogram: Conduct trials to evaluate safety and efficacy of performance enhancing drugs.	ty and effica	cy of perfor	mance enhar	ncing drugs.						

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Project D834

FY 1999 Planned Program:
941 Complete safety and efficacy trials of performance enhancing drugs; prepare regulatory filings.
Total 941

Exhibit R-2 (PE 0604807A)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATION	N SHEET (R-2 Exhib	(t)	DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604807A Medi Development	PE NUMBER AND TITLE 0604807A Medical Materiel - Engineering Development	teriel - Eng		РКОЈЕСТ D834
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 876 901 -47 854	FY 1997 884 865 865	FY 1998 919 931	FY 1999 927 941		
 C. Other Program Funding Summary: Not Applicable. D. Schedule Profile: Multiple medical developmental products will advance through the various events throughout the FY. 	ill advance thr	ough the various	s events throughc	ut the FY.		
Project D834	Page	Page 10 of 15 Pages			Exhibit R-2 (PE 0604807A)	(\
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RDT&E PROGRAM ELEMENT/PRO	PROJECT COST BREAKDOWN (R-3)	ST BR	EAKDC	WN (R-	E	DATE F	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Б	PE NUMBER AND TITLE 0604807A Medi Development	ND TITLE A Medica nent	al Materie	PE NUMBER AND TITLE 0604807A Medical Materiel - Engineering Development	ering	1	PROJECT D834
A. <u>Project Cost Breakdown</u> Test & Evaluation Product Development Project Management Total	EY 1996 0 834 20 854	FY 1997 44 817 865	9 <u>97</u> 44 817 4 865	FY 1998 897 0 34 931	FY 1999 711 0 230 941			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations	Project Office Pr <u>EAC</u> FY	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Contracts Sunnert and Management Organizations			834	817	0	0	Cont	1651
USAIMMDA Contracts Test and Evaluation Organizations:			20	7 0	34	51 179	Cont	109
Army Labs			0	44	897	711	Cont	1652
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	·		834 20 854	817 4 44 865	34 897 931	230 711 941		1651 288 1652 3591
		£ 						
rioject Doo4	1019 1019	rage 11 0J 13 rages 1019	S		EX.	Exhibit K-3 (PE 0604807A)	0604807A)	Item 100

RDT&E BUDGET ITEM JUSTIFICATION	TIFICATION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering and Manufacturing Development	0604807A Medical Materiel - Engineering	ring D849
	Development	

				-						
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D849 Infectious Disease Drug and Vaccine- Engineering Development	2093	1980	1206	1741	1767	1750	1594		1343 Continuing Continuing	Continuing

and treatment of viral, bacterial and parasitic diseases, so as to prevent casualties, sustain operational performance and minimize deaths and disability of armed forces during A. Mission Description and Justification: This project funds engineering and manufacturing development of sufficient candidate medical countermeasures to permit large-scale field testing and complete studies required for FDA licensure. Work performed in laboratories and among troop populations is directed to prevention, diagnosis, military operations.

Acquisition Strategy: Test and evaluate in-house and commercially developed vaccine candidates in government managed trials to meet FDA requirements.

FY 1996 Accomplishments:

- Completed Phase III trials for the whole cell cholera vaccine.
- Initiated field trials of Enterotoxigenic E. coli whole cell live vaccine. 592
- Conducted safety and efficacy tests of the antimalarial drug Azithromycin.
- Completed contingency protocol for vaccination of troops in Bosnia with tick-borne encephalitis (TBE). 150 2093
 - Total

FY 1997 Planned Program:

- Prepare License Application for Argentine Hemorrhagic Fever Vaccine.
- Complete safety and efficacy testing of antimalarial drug Azithromycin. 947 273 281
 - Conduct Phase II efficacy study for Campylobactor vaccine.
 - Continue efficacy trial on ETEC vaccine.
- Initiate Phase I safety study for TBE vaccine. 147
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Project D849

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (F	र-2 Exhibi	t)	DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineerin	вирсет Астіvіту 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604807A Medi Development	тп∟Е Medical Mat nt	PE NUMBER AND TITLE 0604807A Medical Materiel - Engineering Development	ring	РКОЈЕСТ D849
FY 1998 Planned Program:	Program: Continue trials required to accumulate data to support FDA regulatory filings for Campylobacter, ETEC and tick-borne encephalitis vaccines. Continue extended Phase II trials for Shigella flexneri 602. Prepare New Drug Application (NDA) for antimalarial drug Azithromycin. Continue field trials to evaluate efficacy of antimalarial drugs WR238605 and Halofantrine.	A regulatory filings ug Azithromycin. ugs WR238605 and	for <i>Campylobac</i> Halofantrine.	ter, ETEC and tick-b	orne encephalitis vacci	nes.
FY 1999 Planned Program:	ste expanded field trials proving t t manufacturer's FDA regulatory st expanded field trials to prove e ania skin test antigen. trimalarial drug Azithromycin. st full scale expanded field trials t	he efficacy of Campylobacter, ETEC and vaccinia-verfiling for licensure of tick-borne encephalitis vaccine. fficacy of Shigella flexneri 602, detoxified LPS-OMP or evaluate efficacy of antimalarial drugs WR238605 and the efficacy of antimalarial drugs wreather the efficacy of antimalarial drugs wreather efficacy of antimalarial drugs wreather the efficacy of antimalarial drugs wreather efficacy of antimalarial drugs wreather the efficacy of antimalarial drugs wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy wreather efficacy	and vaccinia-ve phalitis vaccine iffed LPS-OMP igs WR238605 a	ctored Hantaan M-S meningitis group B, mand Halofantrine.	vaccines. multivalent Dengue va	ccines and a
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	e Summary S Budget 1993 C C C C C C C C C C C C C C C C C C C	FY 1997 2022 1980 1980	FY 1998 2053 1206	FY 1999 2031 1741		
Change Summary Explanation: Funding: FY 1998: Fu FY 1999: Fu	Summary Explanation: Funding: FY 1998: Funds reprogrammed (-847) to higher priority programs. FY 1999: Funds reprogrammed (-290) to higher priority programs.	grams. grams.				
C. Other Program	C. Other Program Funding Summary: Not Applicable.					
Project D849	Pa	Page 13 of 15 Pages		Exhib	Exhibit R-2 (PE 0604807A)	() Ifom 100

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604807A Medical Materiel - Engineering Development	
 D. Schedule Profile: Multiple medical developmental products will advance through the various events throughout the FY FY 1996 FY 1997 FY 1996 	ough the various events throughout the FY FY 1997 FY 1998	FY 1999
n	4	3 4 1 2 3 4 X X X X X
Project D849	Page 14 of 15 Pages	Exhibit R-2 (PE 0604807A)
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RDT&E PROGRAM ELEMENT/PRO	PROJECT COST BREAKDOWN (R-3)	BREAKD	OWN (R-	3)	DATE F	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUM 0604 Deve	PE NUMBER AND TITLE 0604807A Medical Materiel - Engineering Development	al Materie	l - Engine	əring	<u>a</u>	РРОЈЕСТ D849
A. Project Cost Breakdown Test & Evaluation Product Development Project Management Total	FY 1996 1701 55 337 2093	FY 1997 1442 0 538 1980	FY 1998 911 0 295 1206	FY 1999 433 0 1308 1741			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Total Office Prior to EAC FY 1996	al .o <u>FY 1996</u>	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Contracts		55	0	0	0	Cont	55
Support and Management Organizations USAMMDA Contracts		280	374 164	195 100	310	Cont	1159
Test and Evaluation Organizations Army Laboratories Walter Reed Army		442	313 509	215 296	318	Cont	1288 2354
Inst of research Contracts Navy Laboratories		0 190	0 620	0 400	510	Cont	1720
Government Furnished Property: None Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		55 337 1701 2093	538 . 1442 . 1980	295 911 1206	433 1308 1741		55 1603 5362 7020
Project D849	Page 15 of 15 Pages	s Pages		Exhil	Exhibit R-3 (PE 0604807A)	_	

RDT&E BUDGET ITEM JUS	TEM JUS	TIFICA	TION SI	HEET (R	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fek	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developm	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604808A Land Development	PE NUMBER AND TITLE 0604808A Landmine Warfare/Barrier - Engineering Development	Warfare	/Barrier	Enginee	ring	
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	6802	7556	22605	44133	41782	27530	25691	35593	Continuing	Continuing
D016 Mine Systems Engineering Development	4968	5384	0	0	0	11255	11960	21786	Continuing	Continuing
D415 Mine Neutralization/Detection	1834	2172	22605	44133	41782	16275	13731	13807	Continuing	Continuing

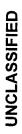
a minefield command and control system for the Wide Area Munition (WAM) and improved sensors that increase countermeasure resistance of Volcano mines which can be Project D016, Mine Systems Engineering Development, provides for the increased tactical effectiveness and responsiveness of landmines by supporting the development of dispensed rapidly from helicopters, ground dispensers, artillery systems and tactical aircraft. Project D415, Mine Neutralization/Detection Engineering Development, is the Handheld Stand-off Minefield Detection System (HSTAMIDS). It provides a group of mutually supported mine detection and neutralization devices to counter a variety of Mission Description and Budget Item Justification: This program element provides for engineering and manufacturing development of mine and countermine systems. engineering and manufacturing development for the Airborne Standoff Minefield Detection System (ASTAMIDS), Explosive Standoff Minefield Breacher (ESMB), and threat mines, minefields and obstacles necessary for implementing the Army's Countermine Modernization Plan. This program element supports Engineering and Manufacturing Development (EMD) and is, therefore, appropriately placed in Budget Activity 5.

FY2000 as reflected above. These increases were inadvertently placed in the wrong project, but do not impact the PE total. The Army database will be corrected at the next NOTE: For FY 1999 and FY 2000, Project D016 should be ZERO as reflected above and Project D415 should be increased by \$3.6M in FY 1999 and by \$4.0M in opportunity.

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Exhibit R-2 (PE 0604808A)

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<u></u>	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	TION SE	HEET (F	R-2 Exhi	bit)		DATE Fet	February 1997	266
BUDGET ACTIVITY 5 - Engineering	BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopm	ent	PE NU 060 Dev	PENUMBER AND TITLE 0604808A Land Development	PENUMBER AND TITLE 0604808A Landmine Warfare/Barrier - Engineering Development	. Warfare	/Barrier	- Enginee		РRОЈЕСТ D016
ŏ	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D016 Mine Systems E	Mine Systems Engineering Development	4968	5384	0	0	0	11255	11960	21786	Continuing	Continuing
A. Mission Descript Acquisition Strategy	A. Mission Description and Justification: Provides for engineering and manufacturing development of scatterable mines and new smart munitions. Acquisition Strategy: A command and control capability is being developed as a product improvement to Wide Area Munition (WAM) and will be in the command and control capability is being developed as a product improvement to Wide Area Munition (WAM) and will be in the control capability is being developed as a product improvement to Wide Area Munition (WAM) and will be in the control capability is being developed as a product improvement to Wide Area Munition (WAM) and will be in the control capability is being developed as a product improvement to Wide Area Munition (WAM) and will be in the capability in the capability is being developed as a product improvement to Wide Area Munition (WAM) and will be in the capability in the capability in the capability is being developed as a product improvement to Wide Area Munition (WAM) and will be in the capability in the capability in the capability is a product improvement to the capability in the capability is perfectly in the capability in the capability is a product improvement to the capability in the capability in the capability is a capability in the capability in the capability is a capability in the capability in the capability in the capability is accounted by the capability in the capability is a capability in the capability in the capability is a capability in the capability in the capability is a capability in the capability in the capability is a capability in the capability in the capability is a capability in the capability in the capability is a capability in the capability in the capability is a capability in the capability in the capability is a capability in the capability in the capability is a capability in the capability in the capability in the capability in the capability in the capability in the capability is a capability in the capability in the capability is a capability in the capability in t	es for engine ability is bei	ering and m	anufacturing d as a produc	g developme ct improven	ring and manufacturing development of scatterable mines and new smart munitions. g developed as a product improvement to Wide Area Munition (WAM) and will be incorporated into the	able mines aı Area Muniti	nd new smar on (WAM)	t munitions. and will be i	incorporated	into the
WANT product improvement program.	ventent program.										
FY 1996 Accomplishments:	nments: Completed Preliminary System Safety Design Conducted C2 System Design effort Completed Communication Network Preliminary Design Conducted Application Specific Integrated Circuit (ASIC	m Safety Des effort etwork Prelii îc Integrated	ign minary Design Circuit (ASIC)Design	gn IC)Design							
FY 1997 Planned Program:	ogram: Receiver/Transmitter critical circuit design Complete ASIC design Build brassboard Receiver/Transmitter Control Station Interface electronics design	ircuit design msmitter ronics design	_								

Control Station interface electronics uesign
Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 1509 131 5384

• Total

FY 1998 Planned Program: Program not funded

FY 1999 Planned Program: Program not funded

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Project D016

RDT&E BUDGET ITEM JUST	M JUSTIFICAT	FIFICATION SHEET (R-2 Exhibit)	۲-2 Exhik	it)	DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	relopment	PE NUMBER AND TITLE 0604808A Land Development	ттсе Landmine nt	PE NUMBER AND TITLE 0604808A Landmine Warfare/Barrier - Engineering Development	- Engineering	PROJECT D016
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustment to appropriated value FY 1998 Pres Bud request	FY 1996 5096 5392 -424 4968	FY 1997 5499 5384 5384	FY 1998 0	FY 199 0 0		
ing Summary	FY 1996 FY 1997	FY 1998 FY 1999	FY 2000	FY 2001 FY 2002	To FY 2003 Compl	To Total Cost
RDTE, A Budget Activity 4 PE 0603619A, Project D005, Landmine Adv Dev		3767 4258				
D. Schedule Profile	FY 1996	FY 1997	4	FY 1998	FY 1999	9 4
Complete WAM C2 Circuit Design Complete WAM System Network Control Electronics Design Complete Radio Brassboard Design Integrate, assemble and test complete software development Qualify WAM C2 Prototype *Milestone Complete		×	\times \times \times			
Project D016		Page 3 of 8 Pages		Exhik	Exhibit R-2 (PE 0604808A)	
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RDT&E PROGRAM ELEMENT/PROJ	ECT COST BRI	/PROJECT COST BREAKDOWN (R-3)		DATE February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604808A Land Development	PE NUMBER AND TITLE 0604808A Landmine Warfare/Barrier - Engineering Development	re/Barrier -	Engineering	PROJECT D016
A. Project Cost Breakdown Hardware Development Test & Evaluation Government Engineering & Support Government Program Support SBIR/STTR Total B. Budget Acquisition History and Planning Information Not Applicable	1996 FY 4098 270 450 150 1968	1997 4328 275 475 175 131 5384 5384	EY 1999 Exhibit	1999 Exhibit R-3 (PE 0604808A)	
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	RDT&E BUDGET ITEM JUS	EM JUS	TIFICAT	FION SF	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 5 - Engineering	вирбет АстіvітY 5 - Engineering and Manufacturing Development	evelopm	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604808A Land Development	TITLE andmine it	Warfare	/Barrier	PE NUMBER AND TITLE 0604808A Landmine Warfare/Barrier - Engineering Development		РКОЈЕСТ D415
Ö	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D415 Mine Neutralization/Detection	Ition/Detection	1834	2172	22605	44133	41782	16275	13731	13807	Continuing	Continuing
A. Mission Descript (ASTAMIDS), Explo Detector (IVMMD). necessary for implem	A. Mission Description and Justification: This project provides engineering and manufacturing development for the Airborne Standoff Minefield Detection System (ASTAMIDS), Explosive Standoff Minefield Breacher (ESMB), Handheld Stand-off Minefield Detection System (HSTAMIDS), and Interim Vehicle Mounted Mine Detector (IVMMD). It provides a group of mutually supported mine detection and neutralization devices to counter a variety of threat mines, minefields and obstacles necessary for implementing the Army's Countermine Modernization Plan.	oject provide her (ESMB), supported n	s engineerin Handheld S ine detectionion Plan.	ig and manu tand-off Mis n and neutra	facturing de nefield Dete lization dev	velopment for ction System ices to count	or the Airbor (HSTAMIL er a variety o	ne Standoff OS), and Inte of threat mir	s engineering and manufacturing development for the Airborne Standoff Minefield Detection System Handheld Stand-off Minefield Detection System (HSTAMIDS), and Interim Vehicle Mounted Mine ine detection and neutralization devices to counter a variety of threat mines, minefields and obstacles on Plan.	Detection Sy: Mounted Mids and obsta	item line cles
Acquisition Strategy competed developme	Acquisition Strategy: ASTAMIDS and IVMMD - Sole source production contract awar competed development contract followed by competitively competed production contract.	Sole source titively comp	production c eted product	ontract awa	rded to comp	petitively cor	npeted deve	lopment con	production contract awarded to competitively competed development contractor; ESMB - Competitively eted production contract.	ИВ - Сотре	titively
FY 1996 Accomplishments:	hments: Awarded Contract and Procured Test Hardware for Interim IVMMD. Conducted Test and Evaluation for IVMMD.	ed Test Hard in for IVMM	ware for Inte D.	erim IVMM	D.						
FY 1997 Planned Program:	rogram: Conduct Milestone II Review for ASTAMIDS. Conduct Source Selection and Initiate Engineering Development Design for ASTAMIDS. Conduct Milestone II review for IVMMD Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)	for ASTAM I Initiate Eng for IVMMD :search/Smal	IDS. ineering Dev Business Te	/elopment D	DS. neering Development Design for ASTAMIDS. Business Technology Transfer (SBIR/STTR) Programs	STAMIDS. [R/STTR) Pr	ograms				
FY 1998 Planned Program:	rogram: Conduct Milestone II review, prepare solicitation, source selection, and award EMD contract for ESMB. Build hardware and conduct contractor testing for ESMB. Initiate engineering, development, design for ESMB. Complete ASTAMIDS EMD design. Initiate ASTAMIDS system fabrication/integration. Initiate IOT&E and PQT planning for ASTAMIDS.	prepare solic ontractor tes nent, design design. abrication/int	itation, sour ting for ESM for ESMB. egration.	ce selection, 1B.	, and award	EMD contra	ct for ESMB	٠			
Project D415				Page 5 of 8 Pages	8 Pages			Exhibi	Exhibit R-2 (PE 0604808A))604808A)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHE	ET (R-2	Exhib	it)		DATE Feb	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBI 06048 Develo	PE NUMBER AND TITLE 0604808A Land Development	E dmine	Warfare	/Barrier	PE NUMBER AND TITLE 0604808A Landmine Warfare/Barrier - Engineering Development		РРОЈЕСТ D415
FY 1999 Planned Program: 8662 Continue ESMB engineering, development, and design. 8000 Build ESMB hardware and conduct contractor testing. 350 Conduct ESMB configuration design review (CDR). 18200 Complete ASTAMIDS fabrication/integration of test hardware. 800 Complete PQT, and IOT&E for ASTAMIDS 7315 Conduct HSTAMIDS source selection and initiate EMD. 806 Procure HSTAMIDS long lead test hardware. Total 44133	ıre.							
B. Project Change SummaryFY 1996FY 97 President's Budget1881Appropriated Value1990Adjustments to Appropriated Value-156FY 98 Pres Bud Request1834	FY 1997 14232 2172 2172		EY 1998 22866 22605	FY 1999 36637 44133	29 33			
Change Summary Explanation: Funding: FY 97 transfer of \$12M by direction of Congress to 0603619A D606 to continue DEM/VAL, conduct evaluation of alternative technologies and delay start of EMD for ASTAMIDS. FY99 increase of \$3.9M in accordance with restructured EMD phase for ASTAMIDS and \$3.6M to accelerate HSTAMIDS. Schedule: Milestone II IPR for ASTAMIDS delayed until 4Q97. Milestone III for ASTAMIDS rescheduled for 4Q00.	0606 to cor hase for AS	tinue DEM TAMIDS (I/VAL, coi and \$3.6M MIDS reso	nduct evalua to accelera theduled fo	ation of alter te HSTAMI r 4Q00.	mative techno DS.	ologies and	delay
g Summary FY 1996 FY 1997	FY 1998 FY	FY 1999 F	FY 2000	FY 2001	FY 2002	FY 2003	To <u>Compl</u>	Total Cost
RDTE, A Budget Activity 4 PE 0603619A, Project D606, Countermine/Barrier 35768 27860 1 Advanced Development	15115	9569	6368	17564	8600	0086	Cont	Cont
	6400	4333	3992	11144 3413	12003 7413	12059 7417	Cont	14725 Cont
Project D415	Page 6 of 8 Pages	Ses			Exhibi	Exhibit R-2 (PE 0604808A)	04808A)	Item 101
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RDT&E PR	RDT&E PROGRAM ELEMENT	EMENT/PR	I/PROJECT	COST B	REAKD	COST BREAKDOWN (R-3)	(F)	DATE		100
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	nufacturing [Development		PE NUMBER AND TIT 0604808A La Development	PE NUMBER AND TITLE 0604808A Landn Development	nine Warf	ртпе Landmine Warfare/Barrier - Engineering ent	r - Engin	rebruary 1997 PROJ neering D41	PROJECT D415
A. Project Cost Breakdown Primary Hardware Development Test and Evaluation Government Engineering and Support Government Program Management SBIR/STTR Total	t pport ent	FY 1996 1097 190 447 100		FY 1997 1119 800 200 53 2172	[Y] 1	EY 1998 16305 1600 4300 400 22605	EY 1999 36933 1420 5080 700 44133	1999 1920 1420 700 4133		
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Perform Performing or Funding Obligation Activity Vehicle Date E Product Development Organizations	and Planning Infe	ormation Performing Activity EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
TBD TBD TBD TBC Misc. Various Various SBIR/STTR Support and Management Organizations	TBD Various anizations				1097	1119	16305	36933	Cont 0	54357 1097 53
NVESD/CECOM Misc. Test and Evaluation Organizations					547	800	3500 1200	4100	Cont	8947 3080
TECOM Va Misc. Va Government Furnished Property: None	Various Various y: None				190		1600	1420	Cont	3210
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	÷.				1097 547 190 1834	1172 1000 2172	16305 4700 1600 22605	36933 5780 1420 44133		55507 12027 3210 70744
Project D415			Page	Page 8 of 8 Pages			Exhib	Exhibit R-3 (PE 0604808A))604808A)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SE	HEET (R	-2 Exhil	bit)		Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NU 060 Eng	PE NUMBER AND TITLE 0604814A Sens Engineering Dev	PE NUMBER AND TITLE 0604814A Sense and Dest Engineering Development	PENUMBER AND TITLE 0604814A Sense and Destroy Armor Munition - Engineering Development	Armor I	Munition	ı	
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	15764	9934	22372	20813	12873	1960	0	0	0	1004761
D2ST SADARM Operational Test	0	300	5494	0	0	0	0	0	0	5794
D644 Generic SADARM Engineering Development	15764	9634	16878	20813	12873	1960	0	0	0	998967

Mission Description and Budget Item Justification: Sense and Destroy Armor (SADARM) munitions will provide an enhanced fire/counterfire capability for 155mm howitzer delivery systems. SADARM can attack targets well beyond the Forward Line of Troops (FLOT) in a fire-and-forget mode. SADARM can be used in day and night, inclement weather and degraded battlefield conditions.

ejected from the 155mm projectile, the PI SADARM submunitions deploy and descend toward the ground at a constant velocity and spin rate. The submunitions contain an and a combined effects (multi-frag) warhead permitting it to kill more targets. As a result, the PI SADARM will be more effective against its primary target (self-propelled howitzers) and secondary targets (light and heavy missile launchers, surface-to-air missile sites, air defense units, surface-to-surface missiles and towed howitzers). When These capabilities will be enhanced by the SADARM Product Improvement (PI) program which begins in FY 1997. The PI SADARM submunition will have an enlarged footprint (permitting each submunition to cover approximately three times the area of the baseline SADARM), improved infrared sensor to see targets at higher altitudes, improved sensing mechanism which combines a dual-mode millimeter wave sensor with an improved infrared sensor array. If a target is present within the scan area (approximately 53,000 square meters or 12 football fields). The submunition detects and destroys the target with the new combined effects warhead.

The projects within this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are, therefore, correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604814A)



RDT&E BUDGET ITEM JUS	EM JUS	TIFICAL	TION SH	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	evelopm	ent	PE NI 060 Enç	PE NUMBER AND TITLE 0604814A Sense and Desi Engineering Development	тіт <u>ге</u> Sense and I Develop	d Destro	/ Armor	אוזורב Sense and Destroy Armor Munition - ig Development		PROJECT D2ST
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D2ST SADARM Operational Test	0	300	5494	0	0	0	0	0	0	5794
A. <u>Mission Description and Justification</u> : This project finances the direct costs of planning and conducting operational test and evaluation of the Sense and Destroy Armor (SADARM) munitions by the Operational Test and Evaluation Command (OPTEC). SADARM is an Acquisition Category (ACAT) IC system with an Initial Operational Test and Evaluation (IOTE) in FY 1998. Operational testing is conducted under conditions that approximate, as closely as possible, those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the system. Project D2ST is restructured from SSN E66300, Projectile, Artillery, 155mm SADARM, M898, Procurement Ammunition, Army, and is not a new start.	roject finance est and Evalu 8. Operation ne system. O	ss the direct of attion Commation Commation to testing is control PTEC providuals.	costs of plan and (OPTE conducted un des Army le lery, 155mm	nning and co C). SADAR nder conditic adership wit	nducting opout is an Acquist an Acquist and appropriate independent independen	erational test puisition Cat oximate, as ordent test and	t and evaluat sgory (ACA closely as pc 1 evaluation munition, A	tion of the Se T) IC system ssible, those of effectiven vrmy, and is	nse and Des with an Init encountered less and sults	troy ial I in actual ubility of urt.
FY 1996 Accomplishments: Project not funded in FY 96	FY 96									
 FY 1997 Planned Program: 293 Planning and preparation for test during the 3QFY98 IOTE 7 Small Business Innovation Research (SBIR) Program Total 300 	test during th esearch (SBI)	e 3QFY98 I(t) Program	OTE							***
FY 1998 Planned Program:										
FY 1999 Planned Program: Project not funded in FY 99	FY 99									
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 0		FY 1997 309 300	FY 1998 5575	FY 1999 0	፩ ∣ O			
Adjustments to Appropriated Value FY 1998 Pres Bud Request		C	0	300	5494		0			

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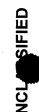
Exhibit R-2 (PE 0604814A)

C. Other Program Funding Summary: None

Project D2ST

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604814A Sense and Destroy Armor Munition - Engineering Development	PROJECT PROJECT D2ST
9661 X	Y 1997 FY 199	FY 1999
Initiate preparation for 3Q FY 1998 IOTE X IOTE X	2 3 4 1 2 3 4	4 1 2 3 4
Project D2ST	Page 3 of 9 Pages	Exhibit R-2 (PE 0604814A)
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT C	OST BF	REAKDO	OWN (R-	3)	DATE Fe	February 1997	760
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	1	PE NUMBER AND TITLE 0604814A Sens Engineering Dev	AND TITLE A Sense ring Deve	PE NUMBER AND TITLE 0604814A Sense and Dest Engineering Development	PE NUMBER AND TITLE 0604814A Sense and Destroy Armor Munition - Engineering Development	Munition		PROJECT D2ST
A. <u>Project Cost Breakdown</u> Operational Test and Evaluation SBIR Total	FY 1996 0	FY 1997 293 7 300	9 <u>97</u> 293 7 300	EY 1998 5494 5494	FY 1999			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contract Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations: None Support and Management Organizations: None	Project Office <u>EAC</u> I	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total
Test and Evaluation Organizations OPTEC, Alex, VA SBIR		0	0	293 7	5494	0	0	5787
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project				300	5494			5794
TOCA 400 PORT	Рас	Page 4 of 0 Pages	٥		і с Х	Evhihit R-3 (PE ORO4814A)	06048144)	
Froject DAS 1	1 uke	4 0/3 Fage 1035				און ואבס לו דו	00040 147 <i>)</i>	Item 102

RDT&E BUDGET ITEM JUS	EM JUS		TION SI	FIFICATION SHEET (R-2 Exhibit)	१-2 Exhi	bit)		DATE Fet	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Jevelopm	ent	PE N 06(En(PE NUMBER AND TITLE 0604814A Sense and Destroy Armor Munition Engineering Development	тіт <u>ге</u> Sense and Develop	d Destroy	/ Armor	Munition		РRОЈЕСТ D644
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D644 Generic SADARM Engineering Development	15764	9634	16878	20813	12873	1960	0	0	0	998967

A. Mission Description and Justification: Sense and Destroy Armor (SADARM)

select eliminated the Honeywell competition. Aerojet then selected Honeywell (now Alliant Techsystems) as their prime sub-contractor and have continued this relationship into production. The Engineering and Manufacturing Development contract with Aerojet has been completed. Starting in FY 1997, a contract will be awarded for a product Acquisition Strategy - R&D: The cost plus incentive fee (CPIF) contracts were awarded in FY 1986 to Aerojet Electrosystems and Honeywell. In FY 1991, a design improvement to the basic SADARM. This effort will focus on expanding the lethal search area of the submunition and improving its ability to kill targets.

Production: A four-year low rate production (LRP) program was initiated in FY 1995. Two contract awards are planned, each with subsequent annual options.

FY 1996 Accomplishments:

- Conducted 155mm performance testing
 - Producibility efforts/testing 8350
- Transited to production efforts
- 5514

15764

Total

FY 1997 Planned Program:

- Hardware in-the-loop support
- Initial/design planning for combined effects warhead 1750
- Trade studies and test for electronics sensor/software 1000
 - Test hardware 850
- Government support and development of initial test criteria/schedules/plans 2167
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs

Project D644

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Exhibit R-2 (PE 0604814A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	CATION S	HEET (R-	2 Exhib	Ē.		DATE Feb	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	96 NG 060	PE NUMBER AND TITLE 0604814A Sense and Dest Engineering Development	⊺∟E ense and Developn	STITLE Sense and Destroy Armor Munition ig Development	Armor N	lunition -	A	РКОЈЕСТ D644
FY 1998 Planned Program: 600 Hardware in-the-loop support 2050 Design of the combined effects warhead 9200 Electronic sensor software development 1650 Test hardware 3378 Government support to development Total 16878								
FY 1999 Planned Program: 750 Hardware in-the-loop support 3400 Design of the combined effects warhead 8800 Electronic sensor software development 4000 Test hardware 3863 Government support to development Total 20813								
B. Project Change Summary FY 1997 President's Budget Request Appropriated Value Adjustments to Appropriated Value EV 1008 Dres Bud Request	FY 1996 16164 16617 -853 15764	FY 1997 9840 9634 9634	EY 1998 17000	FY 1999 21000 20813				
ng Summary	Y 1997 FY 1998 93671 67909 600 507	<u>FY 1999</u> 77572	2 1.10	EY 2001 E 83724	FY 200 <u>2</u> 89597	<u>FY 2003</u> 99699	To Compl 1738558	Total
Project D644	Page 6 of 9 Pages	9 Pages			Exhibit	Exhibit R-2 (PE 0604814A)		(fem 102

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1997	2
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604814A Sense and Destroy Armor Munition - Engineering Development		РRОЈЕСТ D644
D. Schedule Profile	FY 1997 FY	FY 1998 FY 1999	
	o ×	, ×	4.
IOTE: 3Q FY 1998 MSIII: 1Q FY 1999 Award Full Scale Prod: 2Q FY 1999 FUE: 1Q FY 1999			
* Denotes completed milestone			
Project D644	Page 7 of 9 Pages	Exhibit R-2 (PE 0604814A)	
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RD	T&E PROC	SRAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT (COST B	REAKDO	OWN (R-	3)	DATE F	February 1997	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	ig and Manu	facturing [Jevelopment		PE NUMBER AND TITLE 0604814A Sens Engineering De	AND TITLE IA Sense ring Dev	PE NUMBER AND TITLE 0604814A Sense and Desi Engineering Development	PE NUMBER AND TITLE 0604814A Sense and Destroy Armor Munition Engineering Development	r Munitio		РКОЈЕСТ D644
A. Project Cost Breakdown Contractor Engineering Support Government Engineering Support Program Management Support Developmental Test and Evaluation SBIR/STTR	reakdown ring Support sering Support ent Support t and Evaluation	i i		FY 1996 11572 1630 635 1927	FY	FY 1997 7240 1767 250 150	EY 1998 13500 2799 250 329	FY 1999 16950 2702 250 250 911			
Total				15764		9634	16878	20813			
B. Budget Acquisition History and Planning Information	tion History and	l Planning Inf	ormation								
Performing Organizations	izations										
Government	Contract Method/Type	Award or	Performing	Project	Total					,	
Activity	or runding Vehicle	Obligation <u>Date</u>	Acuvity EAC	OIIICE EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations	ent Organizatio	ns									
Prod Improv:-	SS/CPAF	FEB 97	TBD	TBD	0	0	0099	12900	16200	11200	46900
Aerojet- Azusa, CA											
Aerojet-Azusa, CA	C/CPIF	SEP 86	436202	442460	424630	11572				0	436202
ARDEC-Picatinny		,			59403	1065	640	009	750	800	63258
Alliant Tech Sys Hopkins, MN	C/CPIF	SEP 86	TBD	188714	188038	0	0	0	0	0	188038
Loral Vought Sys Dallas. TX	SS/CPIF	SEP 88	TBD	90535	90535	0	0	0	0	0	90535
Miscellaneous	Multiple	Multiple			7645	0	0	0	0	0	7645
Support and Management Organizations Prod Improv.	gement Organiz	ations								•	
ARDEC										>	
PM SADARM							250	250	250	350	1100
Picatinny Arsenal					12245	1630	1767	2699	2202	2116	22659
Project D644				Pag	Page 8 of 9 Pages	S		Exhi	Exhibit R-3 (PE 0604814A)	0604814A)	
					1039						Item 102

RDT8	RE PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT	COST BI	REAKDC	WN (R-	3)	DATE Fe	February 1997	760
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	and Manu	facturing [)evelopment	-1-1	PE NUMBER AND TITLE 0604814A Sens Engineering Dev	PE NUMBER AND TITLE 0604814A Sense and Dest Engineering Development	and Dest	Sense and Destroy Armor Munition ig Development	r Munitior	ı	РРОЈЕСТ D644
	Contract Method/Type or Funding <u>Vehicle</u>	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to <u>FY 1996</u> 16266	<u>FY 1996</u>	FY 1997	FY 1998	FY 1999	Budget to Complete 0	Total <u>Program</u> 16266
Huntsville, AL Miscellaneous SBIR/STTR	•				8368	200	227			0	8868
Test and Evaluation Organizations YPG, Yuma, AZ WSMR	Organization	70			20352 26487	765	40	329	911	367	22764 26487
New Mexico Miscellaneous					92019	232	110	100	200	0	68018
Government Furnished Property: None	ed Property:	None									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	lopment Management Iuation				770251 36879 113915 921045	12637 2130 997 15764	7240 2244 150 9634	13500 2949 429 16878	16950 2452 1411 20813	12000 2466 367 14833	832578 49120 117269 998967
Project D644				Pa	Page 9 of 9 Pages	85		, M	Exhibit R-3 (PE 0604814A)	0604814A)	
					1040						Item 102

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA.	TION SI	HEET (F	१-2 Exhi	bit)		DATE Fe l	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Jevelopm	ent	PE N	PE NUMBER AND TITLE 0604816A Longbow	тіт <u>ге</u> -ongbow					
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	21969	10644	0	0	0	0	0	0	0	575057
DC31 Longbow - Apache	8782	4895	0	0	0	0	0	0	0	556121
DC87 Longbow - Apache TESS	13187	5749	0	0	0	0	0	0	0	18936

includes the efforts necessary to synchronize the integration of the Fire Control Radar (FCR) and the Radio Frequency (RF) missile onto the Apache aircraft. It includes two development of the Longbow Crew Trainer. The projects in this Program Element support research efforts started in the engineering and manufacturing development phase versions of the Longbow Apache AH-64D series aircraft: (1) the AH-64D with the FCR mission kit plus the upgraded 701C engine, and (2) the AH-64D without the FCR mission kit and engine upgrade. Funds were added to Project DC31 in FY97 for Second Generation Forward Looking Infrared (FLIR). Project DC87 provides funding effectiveness and aircraft survivability. The weapon system will be employable by day or night, in adverse weather, and in countermeasures environments. Project DC31 for the Longbow Apache Tactical Engagement Simulation System (TESS). The TESS will perform RF missile simulations in addition to the functions of the Multiple Mission Description and Budget Item Justification: Longbow will provide the AH-64 with a fire-and-forget Hellfire capability, greatly increasing weapon system Integrated Laser Engagement System/Air-to-Ground Engagement System for force-on-force collective training after fielding. Project DC87 also includes follow-on of the acquisition strategy and are, therefore, correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604816A)

RDT&E BUDGET ITEM JUST	EM JUS	TIFICA	TION S	HEET (F	IIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fet	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Jevelopm	ent	PE N	PE NUMBER AND TITLE 0604816A Long	DE NUMBER AND TITLE OE04816A Longbow					PROJECT DC31
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC31 Longbow - Apache	8782	4895	0	0	0	0	0	0	0	556121

AH-64D series to efficiently and effectively integrate the FCR and RF missile. The system provides an adverse weather fire-and-forget missile capability that increases the A. Mission Description and Justification The Longbow program encompasses modifications to the AH-64 Apache as well as upgrades to the aircraft systems for the operational capability of the crew and provides increased lethality and survivability, while complying with Congressional direction to standardize the fleet to a common AH-64 lethality and survivability. The Longbow Apache also retains the capability to fire the Semi-Active Laser Hellfire. The greatly improved design increases the configuration.

Acquisition Strategy: The acquisition strategy involves a sole source contract during the Engineering and Manufacturing Development phase leading to a production contract in FY 96.

FY 1996 Accomplishments:

- McDonnell Douglas Helicopter Systems (MDHS) Prime Contract
- Longbow Limited Liability Corporation Contract Blade Position Indicator System (BPIS) 1236
 - In-house support 492
- Optical Relay Tube (ORT) Handgrip Modification 638 8782
 - Total

FY 1997 Planned Program:

- Second Generation FLIR (Forward Looking Infrared) 4775
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 120
 - 4895 Total

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program: Project not funded in FY 99

Project DC31

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Exhibit R-2 (PE 0604816A)



RDT&E BUDGET ITEM JUS	EM JUSTIFICAT	TIFICATION SHEET (R-2 Exhibit)	EET (R-;	2 Exhib	it)		DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopment	PE NUN 0604	PE NUMBER AND TITLE 0604816A Longbow	rle ngbow					PROJECT DC31
 B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 BES/Pres Bud Request 		FY 1996 9008 9261 -479 8782	FY 1997 0 4895 4895	FY 1998 0	FY 1999 0	99 0 0			
Change Summary Explanation: Funding: FY97 (+4895) Congressional increase for 2nd Generation FLIR.	1895) Congressional incre	ase for 2nd G	eneration FL	JR.					
C. Other Program Funding Summary Aircraft Procurement, Army (AA6607)*	<u>FY 1996</u> FY 1997 346162 320739	FY 1998 417680	EY 1999 500071	FY 2000 556814	FY 2001 576846	FY 2002 571865	FY 2003 595512	To <u>Compl</u> 2234325	Total <u>Cost</u> 6195739
*Includes procurement funding for TESS (shown in Project DC87) and for spares and advanced procurement.	Project DC87) and for sp	ares and adva	nced procure	ement.					
D. Schedule Profile	FY 1996	- E	FY 1997 2 3	1	FY 1998	98	-	FY 1999	4
Line Replaceable Units Qualification X* Environmental Control System Redesign X* Optical Relay Tube (ORT) Handgrip Mod Second Generation FLIR on contract Integration/Flight Testing FLIR Blade Position Indicator System	*	,	×		1				
*Denotes completed activity.									
Project DC31		Page 3 of 9 Pages	^a ages			Exhibit	Exhibit R-2 (PE 0604816A)	604816A)	
		1043							Item 103

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT C	SOST BF	REAKD(OWN (R-	3)	DATE F	February 1997	260
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604816A Long	AND TITLE A Longbow	woo				PROJECT DC31
A. Project Cost Breakdown Contractor Engineering and Development Government In-House Program Management Other Government Support Process Action Team Support (PATS) Contractor Program Support Support Total	FY 1996 8290 492 0 0 8782	EY 1997 4000 775 120 4895	1997 4000 775 120 4895	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contract Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
McDonnell CPIF Aug 89	459566	453150	6416				0	459566
ems	3889	3251	638				0	3889
ORT Handgrip Ordering Modifications Agreement Longbow Limited Liability Corp	1236		1236				0	1236
Brls Lockheed Martin Basic Second Generation Ordering FLIR	4000			4000			0	4000
Support and Management Organizations Govt. Prog. Mgmt. Varies Quarterly		75026	492				0	75518
Project DC31	Page	Page 4 of 9 Pages			Exhik	oit R-3 (PE	Exhibit R-3 (PE 0604816A)	



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RD	F&E PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT	COST BI	REAKDO	JWN (R-	3)	DATE Fe	February 1997	197
ВИDGET АСТІVITY 5 - Engineering and Manufacturing Developm	g and Manu	facturing [Development		PE NUMBER AND TITLE 0604816A Long	PE NUMBER AND TITLE 0604816A Longbow	MO(PROJECT DC31
Contractor or Government Performing Activity PATS Contractors SBIR/STTR	Contract Method/Type or Funding Vehicle Varies	Award or Obligation <u>Date</u> Quarterly	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to <u>FY 1996</u> 6903	FY 1996	<u>FY 1997</u> 120	FY 1998	FY 1999	Budget to Complete 0	Total Program 6903 120
Test and Evaluation Organizations Test Activities Varies FLIR Testing Aviation Tech Test Center (Ft.	n Organizations Varies Aviation Tech Test Center (Ft. Rucker)	S Quarterly			4114		775			0 0	4114
Government Furnished Property Not applicable	shed Property	Not applicable									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	velopment d Management valuation				456401 81929 4114 542444	8290 492 8782	4000 120 775 4895				468691 82541 4889 556121
Project DC31				Pa	Page 5 of 9 Pages	Sõ	:	Exh	Exhibit R-3 (PE 0604816A)	0604816A)	
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RDT&E BUDGET ITEM JUS	ем лиз	TIFICA.	TION S	HEET (F	TIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Developm	lent	PE NI 0 6 0	PE NUMBER AND TITLE 0604816A Long	PE NUMBER AND TITLE 0604816A Longbow					PROJECT DC87
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC87 Longbow - Apache TESS	13187	5749	0	0	0	0	0	0	0	18936

Multiple Integrated Laser Engagement System/Air-to-Ground Engagement System for force-on-force collective training after fielding. Project DC87 also includes follow-A. Mission Description and Justification: The Tactical Engagement Simulation System (TESS) will perform RF missile simulations in addition to the functions of the on development of the Longbow Crew Trainer. The TESS consists of an "A" kit and a "B" kit.

Acquisition Strategy: The Apache Attack Helicopter Project Manager's Office will contract with McDonnell Douglas Helicopter Systems to do the provisioning for the "A" kit that consists of on-board software for data interface operator control software, wiring, and power source taps for the "B" kit.

FY 1996 Accomplishments:

- Development, fabrication, and integration of the TESS "A" kit and "B" kit 7164
- Development, fabrication, and integration to upgrade Combat Training Centers (CTCs) 3084
 - Continued development of the Longbow Crew Trainer 1989
 - Fire Control Radar Engineering Support 950

13187 Total

FY 1997 Planned Program:

- Complete integration of the TESS "A" and "B" kits 4608
 - Complete integration of the CTC interface 1000
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs 141

5749 Total FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program: Project not funded in FY 99

B. Project Change Summary	FY 1996	FY 1997	FY 1998
FY 1997 President's Budget	13937	5872	0
Appropriated Value	14329	5749	

FY 1999

13937 14329 -1142 13187 Adjustments to Appropriated Value FY 1998 BES/Pres Bud Request Appropriated Value

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	CATION SHEET	(R-2 Exhil	oit)		DATE Feb	February 1997	7
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604816A Long	PE NUMBER AND TITLE 0604816A Longbow				D. D.	PROJECT DC87
C. Other Program Funding Summary	007 FV 1008 FV 1000	00 EV 2000	EV 2001	FV 2002	FV 2003	To	Total
	3435			8000	8000	0	39034
*This procurement funding represents only the portion of this line to be used for the TESS effort. The total procurement line (AA6607) includes additional funding for all other Longbow Apache efforts.	used for the TESS effort.	The total procur	rement line (A	.A6607) inc	sludes additi	onal funding	for all
D. Schedule Profile FY 1996	FY 1997	7 7 7	FY 1998	∞ "	.	FY 1999	
Initiated TESS "A" & "B" kits development, X* fabrication and integration Continue TESS "A" & "B" kits integration Longbow Crew Trainer Complete TESS "A" & "B" kits integration	N ×				-		t
*Denotes completed activity.				1			
Project DC87	Page / of y Pages			EXUIDIT	Exhibit K-2 (PE 0604816A)	_ [
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RDT&E PROGRAM ELEMENT/PRO	SJECT (SOST BI	REAKDO	PROJECT COST BREAKDOWN (R-3)	3)	DATE	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604816A Long	AND TITLE	MO!				PROJECT DC87
A. Project Cost Breakdown Contractor Engineering and Development Longbow Crew Trainer Development SBIR/STTR Total	FY 1996 11198 1989 13187	FY	FY 1997 5608 0 141 5749	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or								
nent Method/Type Award or Perforing or Funding Obligation Ac	Project Office	Total Prior to					Budget to	Total
Activity Vehicle Date EAC Product Development Organizations	EAC	FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Complete	Program
McDonnell		0	7903	3626		0	0	11529
Douglas Helicopter System								
Lockheed Martin			2728					2728
Electro Optics								
Systems Intercostal			206					206
Electronics								
Support and Management Organizations:		ć	Ċ.				•	
SIALCUM		- •	343 356	200			0 0	343
Longbow Limited		0	950	400			0	1350
Liability Corp.		c	-	899	•		c	027
SBIR/STTR		>	>	141			0	141
Test and Evaluation Organizations: Test Activities Varies Quarterly		0	0	414			0	414
Government Furnished Property Not applicable								
Project DC87	Page	Page 8 of 9 Pages	S		Exhik	Exhibit R-3 (PE 0604816A)	0604816A)	
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RDT&E PROGRAM ELEMENT/PROJECT	PROJECT COST BREAKDOWN (R-3)	OWN (R-3	€	DATE	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604816A Longbow	how				PROJECT DC87
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to EY 1996 0 11538 0 1649 0 0 0 0 13187	FY 1997 3626 1709 414 5749	FY 1998	FY 1999	Budget to Complete	Total Program
Project DC87	Page 9 of 9 Pages		Exh	ibit R-3 (PE	Exhibit R-3 (PE 0604816A)	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION SI	HEET (F	R-2 Exhi	bit)		DATE Fel	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Developm	ent	PE N 060	PE NUMBER AND TITLE 0604817A Com Manufacturing I	PE NUMBER AND TITLE 0604817A Combat Identification - Engineering & Manufacturing Development	lentificat opment	ion - Eng	jineering	త	
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	23669	16411	19784	13379	2966	9912	10430	10472	Continuing	Continuing
D482 Combat Identification EMD	23669	13575	14773	7867	6956	6916	7439	7481	Continuing	Continuing
D901 All Service Combat ID Evaluation Team	0	2836	3003	3008	3001	2996	2991	2991	Continuing	Continuing
D902 Dismounted Soldier CID	0	0	2008	2506	0	0	0	0	0	4497

friends, foes, and neutrals an absolute necessity, but increasingly difficult to achieve. The ability of weapons systems to engage targets at ranges longer than the capability to positively identify them significantly increases the potential for fratricide. This Program Element (PE) is directed toward the design and development of distinct technology Mission Description and Budget Item Justification: The world situation and modern warfare are evolving in a manner that dictates making reliable identification of correctly assigned in Budget Activity 5. Project D482 addresses the ground-to-ground vehicle mounted mission area, Project D901 addresses improvement of tactics, techniques and procedures across all mission areas, and Project D902 addresses the ground-to-ground dismounted mission area. Project D902 is a new start. devices to help minimize this battlefield deficiency. The projects within this PE are in the Engineering and Manufacturing Development (EMD) phase and the PE is

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		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	FION SE	HEET (R	-2 Exhil	bit)		DATE Fe!	February 1997	97
BUDGET ACTIVITY 5 - Engineer	l∨lTY eering	вирдет астіvіту 5 - Engineering and Manufacturing Development	evelopm	ent	PE NU 060 Mar	PE NUMBER AND TITLE 0604817A Com Manufacturing [PE NUMBER AND TITLE 0604817A Combat Identification - Engineering & Manufacturing Development	lentificat opment	ion - Eng	jineering		РRОЈЕСТ D482
	8	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D482 Comba	at Identific	Combat Identification EMD	23669	13575	14773	7867	9569	6916	7439	7481	Continuing	Continuing
A. Mission I. (platform sper and practices participate in point-of-engal Shooters quer one second. E	Descripticific) and to shorte coalition agement speement sty potentity backs is reall be	A. Mission Description and Justification: The Battlefield Combat Identification System (BCIS) is the lead Army horizontal technology initiative using the "A kit" (platform specific) and "B kit" (common to all platforms) philosophy. The program takes advantage of acquisition streamlining and directs industry to use commercial parts and practices to shorten acquisition timelines and to reduce cost. The purpose of BCIS is to reduce fratricide, a problem made increasingly difficult for gunners as we participate in coalition warfare where partners operate weapon systems formerly associated with adversaries. BCIS is a millimeter wave (mmW), ground-ground (G-G), point-of-engagement system which provides through-the-sight, day/night, all weather positive identification of BCIS equipped U.S., Allied and coalition platforms. Shooters query potential targets at ranges that can extend beyond 5 km. Friendly platforms targeted by friendly shooters generate automatic electronic responses in less than one second. BCIS is resistant to electronic countermeasures, active exploitation and deception. BCIS will be demonstrated during the Army Digitization Exercise, Task Force XXI. It will be used by combat, combat support, and combat services support units.	ttlefield Com orms) philoso reduce cost. tte weapon sy -the-sight, de tend beyond easures, activ	ibat Identific phy. The purpose The purpose stems forme ty/night, all 5 km. Frien cexploitati	cation Syster ogram takes of BCIS is erly associate weather postdly platform on and decel support units	advantage o advantage o to reduce fra ed with adve itive identifi ns targeted b ption. BCIS	nbat Identification System (BCIS) is the lead Army horizontal technology initiative using the "A kit" phy. The program takes advantage of acquisition streamlining and directs industry to use commercial parts. The purpose of BCIS is to reduce fratricide, a problem made increasingly difficult for gunners as we ystems formerly associated with adversaries. BCIS is a millimeter wave (mmW), ground-ground (G-G), ay/night, all weather positive identification of BCIS equipped U.S., Allied and coalition platforms. 5 km. Friendly platforms targeted by friendly shooters generate automatic electronic responses in less than we exploitation and deception. BCIS will be demonstrated during the Army Digitization Exercise, Task pat services support units.	y horizontal streamlining oblem made IS is a millin IS equipped cooters gener onstrated dur	technology g and directs increasingly neter wave (U.S., Alliec ate automati ing the Arm	initiative us industry to difficult for mmW), grou man Coalitic ic electronic by Digitizatic	sing the "A k use commen r gunners as und-ground (on platforms r esponses ir	it" cial parts we (G-G), I less than Task
Acquisition S for participati to the Low Co	Strategy: ion in TF ost Desig	Acquisition Strategy: A competitive, cost plus award fee contract, for 45 EMD units and option quantities, was awarded Aug 93. Additional quantities have been procured for participation in TF XXI AWE and the Combat ID International Demonstration. This contract has been modified to include producibility engineering efforts that will lead to the Low Cost Design for the BCIS.	d fee contrac) Internatioាន	ıt, for 45 EN ıl Demonstra	1D units and ation. This c	l option quan contract has l	ntities, was av been modifie	warded Aug ed to include	93. Additio producibilit	nal quantitie y engineerin	es have been ng efforts tha	procured it will lead
FY 1996 Accomplishments:	complish 673 14375 3812 3000 1809 23669	ments: Completed technical and user testing. Completed hardware build for platform integration, and training/maintenance for TF XXI. Initiated producibility engineering design efforts. All Service Combat Identification Evaluation Team (ASCIET) Support. Completed hardware build for International Demonstration.	testing. platform int aring design etion Evaluati	egration, andeforts. on Team (A	d training/m: SCIET) Suț tion.	aintenance fi pport.	or TF XXI.					
FY 1997 Planned Program:	3359 2225 5171 2500 320 13575	Provide technical, integration, training and maintenance support for TF XXI experiment. Complete producibility engineering design effort. Initiate fabrication, assembly and test of Low Cost Producibility models. Develop/update system software for Low Rate Initial Production models. Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs	, training an teering design and test of L are for Low esearch/Sma	f maintenan n effort. ow Cost Pro Rate Initial Il Business 7	ce support fr oducibility n Production r (echnology '	or TF XXI e: nodels. nodels. Transfer (SI	xperiment. 3IR/STTR) F	rograms				
Project D482	2		:		Page 2 of 12 Pages	12 Pages			Exhibi	Exhibit R-2 (PE 0604817A))604817A)	

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JSTIFICATION	ON SHE	ET (R-	Exhib	Ē		DATE Feb	February 1997	76
BUDGET ACTIVITY 5 - Engineering	вирвет аститу 5 - Engineering and Manufacturing Development	oment	PE NUMBER AND TITLE 0604817A Com Manufacturing [ER AND TIT I7A Co acturing	PE NUMBER AND TITLE 0604817A Combat Identifica Manufacturing Development	PE NUMBER AND TITLE 0604817A Combat Identification - Engineering & Manufacturing Development	on - Engi	neering		PROJECT D482
FY 1998 Planned Program:	gram: Continue logistic support for BCIS leave behind systems. Complete fabrication and assembly of Low Cost Producibility Conduct Interoperability Testing. Initiate fabrication, assembly and test LRIP systems for IOTE.	we behind systems. Low Cost Producibility models. LRIP systems for IOTE.	ility models.							
FY 1999 Planned Program:	gram: Continue logistic support for BCIS leave behind systems. Complete fabrication, assembly and test of IOTE hardware. Conduct government PPQT and IOTE. Conduct MS III efforts and initiate request for proposal preparation.	ve behind systems. st of IOTE hardware. Lest for proposal prep	e. eparation.							
B. Project Change Summary FY 1997 President's Budget Request Appropriated Value Adjustments to Appropriated Value	tummary Budget Request priated Value	EY 1996 21853 22074 1595	FY 1997 13886 13575		FY 1998 9730	FY 1999 9752				
FY 1998 Pres Bud Request	quest	23669	13575	10	14773	7867	_			
Change Summary Explanation: Funding: Funding prov	Summary Explanation: Funding: Funding provided for additional BCIS units to support International Demonstration (FY 96 +1595) and IOT&E (FY 98 +5043).	s to support Interna	ational Demor	ıstration (F	7Y 96 +159	5) and IOT&	¿Е (FY 98 -	+5043).		
C. Other Program El Identification Technole	 C. Other Program Funding Summary: Work in this program element is related to and fully coordinated with efforts in PE 0602120 (Battlefield Ground Combat Identification Demonstration). Identification Technology) and PE 0603772 (Ground Combat Identification Demonstration). FY 1998 FY 1999 FY 2000 FY 2001 FY 2002 FY 2003 	am element is relat Identification Dem 96 FY 1997 F	ated to and full nonstration).	ully coordina FY 1999	ited with eff FY 2000	orts in PE 0 FY 2001	602120 (Ba FY 2002	ttlefield Gro FY 2003	und Combat To	Total
RDTE, A Budget Activity 2, PE 0602120A Proi AH15 Ground Combat Identification	RDTE, A Budget Activity 2, PE 0602120A Proi AH15, Ground Comhat Identification Tech	3604	3532	3552	3438	3584	3671	3769	Compl continues	Cost continues
RDTE A, Budget Activity 3, PE 0603772A Proj D281 Ground Combat ID Demo	wity 3, PE 0603772A 6624	24 6897	3362	0	0	0	0	0	0	31454
Project D482		P_C	Page 3 of 12. Pages	iges			Exhibit	Exhibit R-2 (PE 0604817A)	04817A)	
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RDT&E BUDGET ITEM JUS	ET ITEM J	USTIF	ICAT	NO NO	TIFICATION SHEET (R-2 Exhibit)	Exhib	æ		DATE F	February 1997	1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	ring Develo	pment		₩ 8 ≥	PE NUMBER AND TITLE 0604817A Combat Identification - Engineering & Manufacturing Development	nbat Ide Develo	ntificatio pment	n - Eng	ineerin	ag &	PROJECT D482
D. Schedule Profile	FY 2	FY 1996	Ą	_	FY 1997	-	FY 1998 2 3	4	_	FY 1999 2 3	4
Completed technical and user testing Completed hardware build for platform integ, maint/training for TF XXI Initiate producibility engrg design effort Complete hardware build for Int'I Demo Provide tech, integ, tng/maint for TF XXI Develop software including French wave- form and applique/DDL interface Complete producibility engrg design effort Initiate fab, assy, test of LRIP models (35) Complete fab/assy of LRIP models (35) Continue TF XXI hardware support Conduct Interoperability Test Initiate fab, assy/test of IOTE hardware Conduct Platform Compatibility Demo Conduct Platform Compatibility Demo Conduct MS III efforts and initiate RFP prep	· *	* * *	*	××		· ××			×	imes $ imes$	×
* Denotes Milestones completed				Passe 4	Pase 4 of 12 Pages			Xhibi	. R-2 (PE	Exhibit R-2 (PE 0604817A)	
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RDT&	RDT&E PROGRAM ELEMENT/	AM ELEN	MENT/PRO	JECT C	OST BR	EAKDO	PROJECT COST BREAKDOWN (R-3)		DATE F.	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	nd Manufac	turing Dev	velopment		PE NUMBER AND TITLE 0604817A Com Manufacturing [NND TITLE Comba Curing De	PE NUMBER AND TITLE 0604817A Combat Identifica Manufacturing Development	⊃ गा⊤∟E Combat Identification - Engineering & ring Development	gineerin		PROJECT D482
A. Project Cost Breakdown Primary Hardware Development Platform Integration System Engineering/Program Management Support Government Contractor Program Management Personnel Development Test and Evaluation Operational Test and Evaluation ASCIET SBIR/STTR Total B. Budget Acquisition History and Planning Information	lown opment ram Managemer rsonnel valuation lluation	nt Support inning Inform	<u>iation</u>	EY 1996 14302 2060 1280 1454 900 673 3000	EY 1997 10027 1264 1014 950 320 13575		FY 1998 12376 1212 478 310 397 14773	FY 1999 4090 389 139 249 1250 1750			
Performing Organizations Contractor or Government Performing Activity Vehicle Product Development Organizations	ons Contract Method/Typ e or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
TRW C/CPAF 1 GDLS SS/CPFF 2 Misc. MIPR Support and Management Organizations	C/CPAF SS/CPFF MIPR	12 Aug 93 29 Apr 94	69807 8715	69807 8715	29012 6655 3102	14302 1560 500	10027	12376 500 712	4090		69807 8715 4314
Proj Management Multiple CECOM MIPR Test and Evaluation Organizations	Multiple MIPR ganizations				7579 5276	2354 1280	1964 1264	707 478	388		12992
TECOM TEXCOM ASCIET SBIR/STTR	MIPR MIPR MIPR	15 Oct 95 2Q 96			1850	673 3000	320		1250		3100 2423 3973 320
Project D482				Page .	Page 5 of 12 Pages			Exhib	Exhibit R-3 (PE 0604817A)	0604817A)	
					1054						Itam 104

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RDT&E PROGRAM ELEMENT/PROJECT	PROJECT COST BREAKDOWN (R-3)	REAKDO	WN (R-	8	DATE Fe	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604817A Com Manufacturing [AND TITLE A Combi	PE NUMBER AND TITLE 0604817A Combat Identification - Engineering & Manufacturing Development	cation - Er nt	ngineerin		PROJECT D482
Government Furnished Property: Not Applicable							
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1996 38769 12855 2823 54447	FY 1996 16362 3634 3673 23669	FX 1997 10027 3228 320 13575	FY 1998 13588 1185 14773	EX 1999 4090 777 3000 7867	Budget to Complete	Total Program 82836 21679 9816 114331
Project D482	Pave 6 of 12 Paves			Ξ · A L	Evhihit P.3 (DE ORO/847 A)	λ (Δ. Γ. Α. Δ.	
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RDT&E BUDGET ITEM JUST	ЕМ ЈОЅ	TIFICA	TION SI	HEET (F	IIFICATION SHEET (R-2 Exhibit)	bit)		DATE Fe l	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	evelopm	ent	PE NI 060	PE NUMBER AND TITLE 0604817A Com Manufacturing [PE NUMBER AND TITLE 0604817A Combat Identifica Manufacturing Development	ENUMBER AND TITLE 3604817A Combat Identification - Engineering & Manufacturing Development	ion - Enç	jineering	_	РРОЈЕСТ D901
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost

Continuing

Continuing

2991

2991

2996

3001

3006

3003

2836

D901 All Service Combat ID Evaluation Team

participating Services with the Air Force designated as the lead Service. ASCIET is chartered to employ the equipment and personnel of all Services to evaluate, investigate Battle Laboratories, and industry the opportunity to review and evaluate emerging technologies in multi-Service environment on a noninterference basis as a risk reduction and verification. ASCIET began in FY 95 as an effort to evaluate and revise joint TTP using current and new combat ID systems and technologies in a field environment. and assess various concepts of combat identification on the battlefield. ASCIET will also offer Federally Funded Research and Development Centers (FFRDCs), Service A. Mission Description and Justification: All Service Combat Identification Evaluation Team (ASCIET) Support. ASCIET is an expanded effort aimed at fostering improved tactics, techniques, and procedures (TTP) across all combat identification mission areas. The Army, Navy, Air Force and Marine Corps are designated as the ASCIET was funded through Project D482. Restructuring was required because ASCIET is an independent effort from the BCIS EMD work.

Acquisition Strategy: Not applicable

FY 1996 Accomplishments: Funded through PE 0604817A

FY 1997 Planned Program:

•	43	43 Demonstrate situational awareness to BCIS through digital data link reporting to include friend indication, GPS location, unit ID, SINCGARS call
		sign/frequency.
•	1482	Demonstrate A-G target identification capability for rotary wing (OH-58D) platforms via SINGARS SIP(+) radio and embedded GPS interface (EGI).
•	818	Demonstrate direct target ID capability for both fixed wing (AV-8B) and rotary wing (AH-64).
•	424	424 Demonstrate automated "nine line" message generation utilizing Automatic Target Hand-off System (ATHS) II data link to locate and identify targets
		for fixed wing aircraft.
•	69	69 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.
Total	2836	

FY 1998 Planned Program:

erability.	Access surface air and air air CI canabilities in inin
ıt C31 ınterop	face air and a
 Assess joint C31 interoperability 	
750	750

750 Assess surface-air and air-air CI capabilities in joint environment.

1503 Evaluate surface-air, air-ground, ground-ground CI systems.

Total 3003 Project D901 1056

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RDT&E BUDGET ITEM JUSTIFICATIO	TIFICATION SHEET (R-2 Exhibit)	2 Exhibi	it)	DATE	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604817A Combat Identification - Engineering & Manufacturing Development	⊤∟E ombat Ide ig Develo	ntification · pment	- Engineeri		PROJECT D901
 FY 1999 Planned Program: 1506 Evaluate surface-air emerging technologies. 750 Continue assessing surface-air and air-ground capabilities in joint environment. 750 Continue joint C3I interoperability. Total 3006 	ı joint environment.					
B. Project Change Summary: FY 1997 President's Budget Appropriated Value	FY 1997 2897 2836	F <u>Y 1998</u> 0	FY 1999 0			
Adjustificates to Appropriated Value FY 1998 Pres Bud Request	2836	3003	3006			
Change Summary Explanation: Funding: FY98/FY99 - Funding provided to continue Army participation in ASCIET	tinue Army participa	tion in ASCII	Ιέ			
C. Other Program Funding Summary: None						
D. Schedule Profile FY 1996 1 2 3 4 1	FY 1997 2 3	4	FY 1998 2 3	4	FY 1999 2 3	4
	o ×	· ××		××.	×	
Project D901	Page 8 of 12 Pages			Exhibit R-2 (PE 0604817A)	= 0604817A)	
	1					Item 104

RDT&E PROGRAM ELEMENT/PROJECT	MENT/PRO	JECT C	SOST BE	REAKDO	COST BREAKDOWN (R-3)	3)	DATË F	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	evelopment		PE NUMBER AND TITLE 0604817A Com Manufacturing I	AND TITLE A Comb sturing De	PENUMBER AND TITLE 0604817A Combat Identification - Engineering & Manufacturing Development	cation - E nt	ngineerin	ig &	РRОЈЕСТ D901
A. Project Cost Breakdown ASCIET SBIR/STTR Total	FY 1996	FY 1997 2767 69 2836	FY 1998 3003 3003	1 <u>998</u> 3003 3003	FY 1999 3006 3006		<u> </u>		
B. Budget Acquisition History and Planning Information	rmation								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing or Funding Obligation Activity Vehicle Date Product Development Organizations: None Support and Management Organizations: None	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total
Test and Evaluation Organizations: ASCIET SBIR/STTR					2767 69	3003	3006	12000	20776
Government Furnished Property: Not Applicable									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project					2836	3003	3006	12000	20845
Project D901		Page	Page 9 of 12 Pages	ss		EX	nibit R-3 (PE	Exhibit R-3 (PE 0604817A)	Item 104
			1058						1011

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA-	TION S	IEET (R	2 Exhi	bit)		DATE Fel	February 1997	260
BUDGET ACTIVITY 5 - Engineerin	вирсет Астіуітү 5 - Engineering and Manufacturing Developm	evelopm	lent	PE NI 060 Ma	PE NUMBER AND TITLE 0604817A Combat Identifica Manufacturing Development	rir∟E Sombat Id ng Devel	dentificat lopment	ion - Enç	PE NUMBER AND TITLE 0604817A Combat Identification - Engineering & Manufacturing Development		РRОЈЕСТ D902
J	COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D902 Dismounted Soldier CID	oldier CID	0	0	2008	2506	0	0	0	0	0	4497
A. Mission Descrip system, used to posi unit; and an omni-di Goggles. The syster atmospheric condition will also be directly requirements stated were previously fund	A. Mission Description and Justification: The Combat Identification System for the Dismounted Soldier (CIDDS) is a lightweight, laser-based, question and answer type system, used to positively identify friendly soldiers. The system includes a compact, eyesafe, diode laser interrogator; a laser detector assembly; an electronic processor unit; and an omni-directional RF responder. The laser transmitter also includes a near infrared aiming light for aiming the soldier's weapon at night when using Night Vision Goggles. The system will provide range of at least two kilometers under clear weather conditions and will exceed the soldier's target acquisition capability under degraded atmospheric conditions. It will have sufficient angular resolution to resolve individual targets, but not require precise pointing accuracy for robust response. The system will also be directly interoperable with the integrated soldier-to-soldier combat ID functions to be embedded in the Land Warrior equipment suite. The system will fulfill requirements stated in the Joint Service Operational Requirements Document for use by Army, Marine and Special Operations. This is not a new start, efforts were previously funded under PE 0602120A project AH15, Ground Combat Identification Technology.	ombat Identif The system er transmitter wo kilometer lar resolution d soldier-to-4 Requirement AH15, Grou	ication Syst includes a calso includes is under clea to resolve is soldier combas ind Combat	em for the Dompact, eye ess a near infir weather condividual tant ID functifor use by Identificatio	vismounted Safe, diode la rared aiming onditions and gets, but no ons to be em Army, Marinn n Technolog	soldier (CID aser interrog light for air I will exceed t require pre bedded in the e and Specii,	DS) is a ligh ator; a laser ning the sold it he soldier cise pointing te Land War all Operation	tweight, lase detector asserier's weapon s target acque, accuracy fc rior equipme application	r-based, que mbly; an ele n at night wh lisition capal r robust resp rr suite. Th	sstion and an ectronic procession using Ni bility under conse. The sees system with a new starrior and an expectation of the system with a new starrior and a new starrior and a new starrior and an expectation and a new starrior and a new sta	swer type sessor ght Vision degraded system Il fulfill
Acquisition Strateg	Acquisition Strategy: A competitive, cost plus contract for deli	tract for deli	very and test	ing of appr	ivery and testing of approximately 150 units for IOTE.	50 units for]	OTE.				
FY 1996 Accomplis	FY 1996 Accomplishments: Project not funded in FY 96	96 Å:									
FY 1997 Planned P	FY 1997 Planned Program: Project not funded in FY 97	FY 97									
FY 1998 Planned Program:	rogram: Conduct best value proposal evaluation/Milestone II activities. Conduct MS II Decision Review activities. Initiate Hardware/Software engineering design effort	valuation/Mi ew activities gineering de	lestone II ac sign effort	tivities.							
FY 1999 Planned Program:	rogram: Complete hardware engineering design effort. Complete special tooling/peculiar support equipment development. Continue software engineering development/design effort.	ig design effe liar support e ; developmer	ort. quipment de ıt/design eff	evelopment. ort.							

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Project D902

Exhibit R-2 (PE 0604817A)

RDT&E BUDGET ITEM JUST	USTIFICA.	FIFICATION SHEET (R-2 Exhibit)	EET (R	-2 Exhit	oit)		DATE Febi	February 1997	52
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	pment	PE NUI 0604 Man	PE NUMBER AND TITLE 0604817A Com Manufacturing [че number and тitle 0604817A Combat Identifica Manufacturing Development	entificati opment	ion - Eng	PE NUMBER AND TITLE 0604817A Combat Identification - Engineering & Manufacturing Development		РКОЈЕСТ D902
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996		FY 1997	FY 1998 0 2008	FY 1999 0 2506	66 0 96			****
Change Summary Explanation: Funding: FY98/FY99 funding provided to begin E&MD	ding provided to	begin E&MI	0						
C. Other Program Funding Summary FY 1996	96 FY 1997	FY 1998	FY 1999	$\overline{\mathrm{FY}\ 2000}$	FY 2001	FY 2002	FY 2003	To	Total
RDTE, A Budget Activity 2, PE 0602120A Proj AH15 Ground Combat Identification Tech OPA2,BA0515 Combat I D Aiming Light	3291 3604	3532	3552	3438	3584	3671	3769	Compi	
D. Schedule Profile FY 1	FY 1996	- F	FY 1997	-	FY 199	% r	- H (FY 1999	7
Contract Award Conduct MS II Initiate hdw/sftw eng design Complete hdw design Complete spec tools/spt equipment design Continue software design effort		-	n	-	n ×		- ×××		T
Project D902		Page 11 of 12 Pages	2 Pages			Exhibi	Exhibit R-2 (PE 0604817A)	04817A)	
		1060							Item 104

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RDT&E PROGRAM ELEMENT/PROJE	PROJECT COST BREAKDOWN (R-3)	REAKDO	WN (R-	3)	DATE F	February 1997	266
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER 0604817 Manufa	PE NUMBER AND TITLE 0604817A Comb Manufacturing De	^р E NUMBER AND TITLE 0604817A Combat Identifica Manufacturing Development	PE NUMBER AND TITLE 0604817A Combat Identification - Engineering & Manufacturing Development	ngineerin		РКОЈЕСТ D902
A. Project Cost Breakdown Primary Hardware Development System Engineering/Program Management Support Government Contractor Program Management Personnel Total	FY 1996 FY	FY 1997	FY 1998 1839 79 0 90 2008	FY 1999 2298 108 100 2506			
B. Budget Acquisition History and Planning Information							
Performing Organizations Contract Contract Government Method/Type Award or Performing Project Performing or Funding Obligation Activity Office Activity Vehicle Date EAC EAC	cc Prior to	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
TBD	TBD			1848	2306	0	4154
Support and Management Organizations CECOM MIPR Test and Evaluation Organizations: None	0	0	0	160	200	0	360
Government Furnished Property: Not Applicable							
Subtotal Product Development Subtotal Support and Management				1848 160	2306 200		360
Subtofal Test and Evaluation Total Project				2008	2506		360
Project D902	Page 12 of 12 Pages	ges		Exh	ibit R-3 (PE	Exhibit R-3 (PE 0604817A)	
	,						Item 104

RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION S	TIFICATION SHEET (R-2 Exhibit)	-2 Exhi	bit)		DATE Fe l	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Jevelopm	ent	PE N 060 Ha	PE NUMBER AND TITLE 0604818A Army Tact Hardware & Software	⊓⊓∟E \rmy Tac Software	PE NUMBER AND TITLE 0604818A Army Tactical Command and Control Hardware & Software	ımand aı	nd Contr	 -	
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	27231	15780	20022	18697	19717	19709	21910	22267	Continuing	Continuing
DC34 Army Tactical C2 Systems (ATTCS) Engineering	19638	8159	7951	7790	8381	8349	8742	8978	Continuing	Continuing
D323 Common Hardware Software (CHS)	7593	7621	12071	10907	11336	11360	13168	13289	Continuing	Continuing

the required systems engineering to assure integrated Army tactical command and control, and the utilization of common hardware and software throughout the five ATCCS nodal systems. The Common Hardware Software (CHS) project provides common hardware and software to customers to meet their developmental and fielding needs. The (FAADC2I); and (5) Combat Service Support Control System (CSSCS) and to other Army Joint and Allied systems. To provide an overall technically sound, cost effective, and operationally responsive approach, the design and development of ATCCS must be accomplished on a total systems basis. The ATCCS Engineering program provides Command and Control System (ATCCS) program which is a component of the Army Battle Command System (ABCS). The ATCCS program provides automation in the Mission Description and Budget Item Justification: The umbrella program to exploit automation technology for the conduct of combat operations is the Army Tactical projects in this program element support the ATCCS programs which, for the most part, are in the engineering and manufacturing development phase of the acquisition five battlefield functional areas (BFAs) with the following specific systems: (1) Maneuver Control System (MCS); (2) Advanced Field Artillery Tactical Data System (AFATDS); (3) All Source Analysis System (ASAS) for Intelligence/Electronic Warfare; (4) Forward Area Air Defense Command, Control and Intelligence System process and, therefore, are correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604818A)

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	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA	LION SI	HEET (R	2-2 Exhi	bit)		DATE Fel	February 1997	766
BUDGET ACTIVITY 5 - Engineering	вирдет астіvіту 5 - Engineering and Manufacturing Development	evelopm	ent	PE NU 060 Har	PE NUMBER AND TITLE 0604818A Arm) Hardware & Sof	PE NUMBER AND TITLE 0604818A Army Tact Hardware & Software	tical Con	ımand aı	PE NUMBER AND TITLE 0604818A Army Tactical Command and Control Hardware & Software		PROJECT DC34
O	COST (in Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DC34 Army Tactical C	Army Tactical C2 Systems (ATTCS) Engineering	19638	8159	7951	7790	8381	8349	8742	8978	Continuing	Continuing
A. Mission Descript to make sound and tin in support of this miss independently in each to ensure this horizon	A. Mission Description and Justification: Project DC34 - Army Tactical C2 Systems (ATCCS) Engineering: The Air/Land Battle Doctrine requires military leaders to make sound and timely command and control decisions to direct the activities of assigned and supporting units. The umbrella program to exploit automation technology in support of this mission is the ATCCS Program, a component of the ABCS. The effort to achieve horizontal integration of the ATCCS BFAs, although going on independently in each BFA, was not disciplined enough to address all connections and needs within the entire spectra of command, control and communications. Therefore, to ensure this horizontal integration effort is complete and automated, a significant management, systems engineering and integration effort is required.	t DC34 - Arrisions to dire component o addres to addres e and automa	ny Tactical ct the activit f the ABCS. s all connect	C2 Systems ies of assign The effort itions and ne icant manag	s (ATCCS); ted and supp to achieve he eds within the	Engineering orting units. orizontal inte te entire spec	; The Air/L The umbrel gration of th tra of comn ing and integ	and Battle I. la program i le ATCCS B nand, contro	Ooctrine requipolation to exploit au SFAs, althous and commit is required.	ires military tomation tec gh going on unications.	leaders thnology Therefore,
Acquisition Strategr management, testing, Command, Control a	Acquisition Strategy: This project provides the technical and programmatic disciplines required for systems engineering and integration, experimentation, acquisition management, testing, Ada software development, interoperability, fielding, and sustainment to assure an interoperable, affordable ATCCS. The Program Executive Off Command, Control and Communications Systems (PEO C3S) has planned an evolutionary approach to fielding the ATCCS as soon as possible.	hnical and pr teroperability PEO C3S) ha	ogrammatic ', fielding, aı s planned an	disciplines 1d sustainm evolutionar	required for ent to assure y approach	grammatic disciplines required for systems engineering and integration, expe fielding, and sustainment to assure an interoperable, affordable ATCCS. The planned an evolutionary approach to fielding the ATCCS as soon as possible.	ineering and able, afforda e ATCCS as	integration, ible ATCCS soon as pos	ogrammatic disciplines required for systems engineering and integration, experimentation, acquisition fielding, and sustainment to assure an interoperable, affordable ATCCS. The Program Executive Officer planned an evolutionary approach to fielding the ATCCS as soon as possible.	ation, acquis am Executiv	ition e Officer
FY 1996 Accomplishments:	Performed functional analysis and updated command post analysis to support ABCS and Army Vextended the ABCS data architecture and standardization program to additional functional areas	and updated itecture and s	command parandari	ost analysis on program	to support A to additiona	command post analysis to support ABCS and Army Warfighter Experiments (AWE) tandardization program to additional functional areas	my Warfigh ireas	ter Experim	ents (AWE)		
245	Continued are technology insertion program, e.g., advanced confinantiation protocols, advanced networking, factical decision ands, and distributed databases ABCS/Task Force XXI interoperability engineering and system level engineering support	ation program	ıı, c.g., auva zineering an	nceu commi I system lev	unication pro el engineerii	olocols, adva ng support	nced networ	King, tactica	ii decision ai	ids, and dist	Ibuted
• 487 • 1842	Incorporated technology for Brigade and Below Command and Control (B2C2) applications into embedded applications Conducted/supported system configuration developmental/operational demonstrations in preparation for the MCS Limited User Test (LUT) and other	rigade and B	elow Comm developmer	and and Col	ntrol (B2C2) nal demonst	applications rations in pre	into embed	ded applicat the MCS L	ions imited User	Test (LUT)	and other
4322	BFA Operational Tests (OTs) Division XXI TOCs	;	;								
• 3239 Total 19638	Division XXI system integration and interoperability	on and intero	perability								
FY 1997 Planned Program:	ogram:										
900	Perform functional analysis and update command post analysis to support ABCS and AWE Implement the ABCS data architecture and standardization program in all Battlefield Functi Architecture (ATA) compliance	d update con hitecture and	nmand post standardizat	analysis to s ion progran	upport ABC 1 in all Battle	S and AWE efield Functi	onal Areas (l	BFAs) to fac	nmand post analysis to support ABCS and AWE standardization program in all Battlefield Functional Areas (BFAs) to facilitate Army Technical	/ Technical	
Project DC34				Page 2 of 9 Pages	9 Pages			Exhibit	Exhibit R-2 (PE 0604818A)	604818A)	

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET (R-2 Exhibit)	DATE February 1997
BUDGET ACTIVITY 5 - Engineering	вирбет Астіуіту 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604818A Army Tactical Command and Control Hardware & Software	PROJECT IND Control DC34
FY 1997 Planned P 1245 1400 500 Total 8159	<u>,</u> ≒	ogram: (continued) Continue ABCS/AWE system level training and logistics development ABCS/AWE interoperability engineering and system level engineering support Conduct/support system configuration developmental/operational demonstrations in conjunction with MCS IOT&E and other BFA OTs Develop the ABCS security architecture to support Division 2000 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)	3 and other BFA OTs
FY 1998 Planned Program:	Perform functional analysis and update command post analysis to support ABCS and AWE Continue ABCS/AWE system level training and logistics development ABCS/AWE interoperability engineering and system level engineering support/perform depart fielded software, including common and unique applications Conduct and support system configuration developmental/operational demonstrations in con Develop and Implement the ABCS security architecture Implement the ABCS data architecture and standardization program to all Battlefield Funct	Perform functional analysis and update command post analysis to support ABCS and AWE Continue ABCS/AWE system level training and logistics development ABCS/AWE interoperability engineering and system level engineering support/perform dependency analyses and verification and validation of all BFA fielded software, including common and unique applications Conduct and support system configuration developmental/operational demonstrations in conjunction with BFA OTs and AWEs Develop and Implement the ABCS security architecture Implement the ABCS data architecture and standardization program to all Battlefield Functional Areas to facilitate ATA compliance	erification and validation of all s and AWEs ATA compliance
FY 1999 Planned Program:	ogram: Perform functional analysis and update command post analysis to support ABCS Continue the ABCS system level training and logistics development ABCS interoperability engineering and system level eng support/perform depend software, including common and unique applications Conduct and support system configuration developmental/operational demonstra Implement the ABCS data architecture and standardization program for all BFAs Develop and Implement ABCS security architecture	Perform functional analysis and update command post analysis to support ABCS Continue the ABCS system level training and logistics development ABCS interoperability engineering and system level eng support/perform dependency analyses and verification and validation of all BFA fielded software, including common and unique applications Conduct and support system configuration developmental/operational demonstrations in conjunction with BFA OTs Implement the ABCS data architecture and standardization program for all BFAs to facilitate ATA compliance Develop and Implement ABCS security architecture	d validation of all BFA fielded
Project DC34		Page 3 of 9 Pages Exhib	Exhibit R-2 (PE 0604818A)



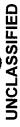




RDT&E BUDGET ITEM JUSTIF	CATION	TIFICATION SHEET (R-2 Exhibit)	۲-2 Exhik	oit)	DATE February 1997	y 1997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604818A Army Tact Hardware & Software	^{ना⊺∟E} Army Tact ≀ Software	ical Comman	PE NUMBER AND TITLE 0604818A Army Tactical Command and Control Hardware & Software	PROJECT DC34
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 10408 10513 9125 19638	EY 1997 8645 8159 8159	FY 1998 8579 7951	FY 1999 8460 7790		
Change Summary Explanation: Funding: FY 96 increased (+6389) to support the Division XXI requirements for Systems Engineering, Integration, and Interoperability (+2736) and hardware for the Tactical Operations Centers (TOCs).	I requiremen	ts for Systems E	ngineering, Int	egration, and Inter	operability (+2736) and	hardware for
C. Other Program Funding Summary: Not Applicable						
D. Schedule Profile FY 1996	4	FY 1997 2 3	4	FY 1998 2 3	FY 1999)9 3 4
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	c			L	אסאססט בונויים מייויים	·
Project DC34	Fage	rage 4 of 9 rages			EXIIIDIL R-2 (PE 00040 10A)	Item 105

RDT&E PROGRAM ELEMENT/PROJECT		OST BE	EAKDO	COST BREAKDOWN (R-3)	3)	DATE F	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604818A Army Tact Hardware & Software	AND TITLE A Army e & Soft	ЭТІТІЕ Army Tactical Command and Control & Software	ommand	and Cont		PROJECT DC34
A. <u>Project Cost Breakdown</u> System Engineering and Integration Support SBIR/STTR Total	FY 1996 19638 19638	FY 1997 7960 199 8159	1997 7960 199 8159	<u>FY 1998</u> 7951 7951	FY 1999 7790 7790			
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date	Project Office	Total Prior to	FV 1006	EV 1007	EV 1000	EV 1000	Budget to	Total
izations			2492	196	0//1	666	District Confidence	3459
			2032 4864 3693	4669	5763	5764	Cont	2632 21060
VE Confracts			2925	336	350	350	Cont	3961
_			813	1264 724 199	1200	1050 626	Cont	5743 2801
Support and Management Organizations: None Test and Evaluation Organizations: None								133
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation			19638	8159	7951	7790		43538
Total Project			19638	8159	7951	7790		43538
Project DC34	Page .	Page 5 of 9 Pages			Exhi	Exhibit R-3 (PE 0604818A)	0604818A)	





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SI	HEET (R	k-2 Exhil	bit)		DATE Feb	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Developm	lent	PE NI 060 Hai	PE NUMBER AND TITLE 0604818A Army Hardware & Sof	PE NUMBER AND TITLE 0604818A Army Tacti Hardware & Software	tical Con	ımand aı	PE NUMBER AND TITLE 0604818A Army Tactical Command and Control Hardware & Software		^р RОЈЕСТ D323
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D323 Common Hardware Software (CHS)	7593	7621	12071	10907	11336	11360	13168	13289	Continuing	13289 Continuing Continuing

efforts for tying together the Army Command and Control Systems. The project provides vehicles (contracts) through which customers can acquire state-of-the-art common hardware/software and associated peripherals to meet developmental and fielding needs. The project also provides software technology support and command post internal A. Mission Description and Justification: Project D323 Common Hardware Software (CHS): CHS is the program through which the Army builds its integrated structures within shelters. The common software supports Army, other Services and Joint systems. The CHS program is instrumental in digitizing the battlefield. Acquisition Strategy: The overall goal is to improve interoperability and lower life cycle costs by standardizing Battlefield Command and Control (C2) automation through centralized buys of non-developmental items (NDI), standardized protocols and reusable software. Four NDI hardware versions are available to meet specific needs of each Battlefield Functional Area (BFA): handheld, portable, transportable and lightweight computer unit.

FY 1996 Accomplishments:

· · · · · · · · · · · · · · · · · · ·	I I	
•	2589	2589 Continued management of the acquisition and delivery of CHS equipment (LCU/CHS-1/CHS-2) in support of customer requirements
•	3639	Continued execution of common hardware and common software reuse programs
•	905	Continued testing CHS-2 equipment (User Confidence Test, Reliability, First Article Test). Manage total testing program in support of customer
		requirements
•	460	Continued exploring state of the art technology insertion in support of ABCS
Total	7593	

FY 1997 Planned Program:

2655 Continue management of the acquisition and delivery of CHS equipment (LCU/CHS-2) in support of customer requirements 3704. Continue execution of common hardware software technology and command nost programs.	145 Smail business innov	Continue management of the acquisition and delivery of CHS equipment (LCU/CHS-2) in support of customer requir Continue execution of common hardware, software technology and command post programs Continue supporting customers testing efforts with CHS equipment Continue exploring state of the art technology insertion in support of ABCS Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)
		exploring state of the art technology insertion in support of ABCS
		iness innovation Kesearch/Small Business Technology Transfer (SBIK/STIK)

Project D323

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Exhibit R-2 (PE 0604818A)

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (F	र-2 Exhibit	(;	DATE February 1997	y 1997
BUDGET ACTIVITY 5 - Engineering	BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604818A Army Tact Hardware & Software	⊓⊓∟E Army Tactic : Software	PE NUMBER AND TITLE 0604818A Army Tactical Command and Control Hardware & Software	nd Control	PROJECT D323
FY 1998 Planned Program:	Le management of the acquisition and be execution of common hardware, so a supporting customers testing efforts te the exploration of state of the art te, integrate and upgrade Army Commerability upgrade and testing	HS equipment (LCI logy and software rquipment strion in support of servironment (COE	J/CHS-2) in supeuse programs ABCS programs) products, techn	delivery of CHS equipment (LCU/CHS-2) in support of customer requirements frware technology and software reuse programs with CHS equipment chnology insertion in support of ABCS programs on Operating Environment (COE) products, technology insertion and Commano	lirements Command Control V	ehicle (C2V)
FY 1999 Planned Program:	te management of the acquisition and te execution of common hardware, so te supporting customers testing efforts te exploring state of the art technology te developing, integrating and upgradi	delivery of CHS-2 equipment in support of customer requirements ftware technology and software reuse programs with CHS equipment insupport of ABCS programs in support of ABCS programs ing Army COE products, technology insertion and C2V interoperal	support of custo euse programs ograms ogy insertion and	ner requirements 1 C2V interoperabilit	y upgrade and testing	ಶಾ
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	Summary FY 1996 Budget 7755 7783 7833 opriated Value -240 equest 7593	<u>FY 1997</u> 7784 7621	FY 1998 7730 12071	FY 1999 7627 10907		
Change Summary Explanation: Funding: FY 98/FY99 Army Techn C. Other Program Funding	Change Summary Explanation: Funding: FY 98/FY99: Funds realigned to this project to support development of Common Operating Environment (COE) software essential to implement the Army Technical Architecture (ATA) Migration plans and digitization efforts (FY 98 +4341, FY 99 +3280) C. Other Program Funding Summary: Not Applicable	opment of Common tization efforts (FY	ı Operating Envi 98 +4341, FY 9	ronment (COE) softv 9 +3280)	vare essential to impl	lement the
-						

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Exhibit R-2 (PE 0604818A)

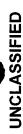
Project D323



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2	Exhibi	Ð		<u>A</u>	DATE Fe	February 1997	y 1997	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604818A Army Tact Hardware & Software	D TITLE Army Tactical Command and Control & Software	sal Cor	mman	d and	Conti	rol	PRO D3	РRОЈЕСТ D323
D. Schedule Profile FY 1996	FY 1997	_	FY 1998	366	4	-	FY 1999	99	4
	· ×	· ×	× ×	· ×	· ×	× ×	· ×		· ×
*Milestone Complete									
	÷								
Project D323	Page 8 of 9 Pages			Ш	xhibit R	Exhibit R-2 (PE 0604818A)	060481	8A)	
	6901		:					Ite	Item 105

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT (SOST BI	REAKDO	JWN (R-	3)	DATE	February 1997	766
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604818A Arm) Hardware & Sof	PE NUMBER AND TITLE 0604818A Army Tact Hardware & Software	Tactical C	⊃ गात∟ Army Tactical Command and Control & Software	and Cont		PROJECT D323
A. Project Cost Breakdown Program Management Personnel Contract Engineering Support SBIR/STTR Total	EY 1996 4595 2998 7593	FY	FY 1997 4626 2850 145 7621	EY 1998 4870 7201 12071	FY 1999 4805 6102 10907			
lanning Information Award or Performing Obligation Activity Date EAC	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Matrix-CECOM Misc. Contracts SBIR/STTR			1287 2998	1248 2750 145	1314	1297 6102	Cont	5146 19051 145
Support and Management Organizations In-House (CHS) Test and Evaluation Organizations None			3308	3478	3556	3508	Cont	13850
Government Furnished Property: None	·							
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation			4285 3308	4143	8515 3556	7399 3508		24342 13850
Total Project			7593	7621	12071	10907		38192
Project D323	Page	Page 9 of 9 Pages 1070	S		Exhi	Exhibit R-3 (PE 0604818A)	0604818A)	Item 105





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	'EM JUS	TIFICA.	TION SI	HEET (R	≀-2 Exhi	bit)		DATE Fel	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Jevelopm	ent	PE NI 0 0 0	PE NUMBER AND TITLE 0604820A Radar Development	птге Radar Dev	velopmeı	nt]	РRОЈЕСТ DE10
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DE10 FAAD Ground Based Sensor	200	0	0	0	6064	9535	9229	0	0	25328

The FAAD GBS contributes to the digital battlefield by automatically detecting, classifying, identifying, and reporting targets [cruise missiles, and unmanned aerial vehicles weather conditions, in the battlefield environments of dust, smoke, aerosols, and enemy countermeasures. It provides 360 degree azimuth coverage for acquisition tracking. weapons. Very accurate and quick reacting, FAAD GBS acquires targets sufficiently forward of the Forward Line of Troops to improve FAAD weapon reaction time and reliable, the FAAD GBS Anti-Radiation Missile and Electronic Countermeasures resistant performance support Army Corps and Divisional Air Defense operations across (UAV's), rotary wing and fixed wing aircraft]. Targets can be hovering to fast moving, as well as, from nap of the earth to the maximum engagement altitude of FAAD sensor with its prime mover/power, identification friend or foe (IFF), and FAAD Command, Control, and Intelligence (C2I) interfaces. The sensor is an advanced three A. Mission Description and Budget Item Justification: The Forward Area Air Defense Ground Based Sensor (FAAD GBS), AN/MPQ-64, consists of a radar-based allow engagement at optimum ranges. The FAAD GBS integrated IFF reduces the potential for fratricide of Army Aviation and Air Force aircraft. Highly mobile and dimensional battlefield X-Band air defense phased-array radar with an instrumented range of 40 km. The FAAD GBS is capable of operating day or night, in adverse the full spectrum of conflict. This project is related to an engineering and manufacturing development program and is therefore correctly placed in BA 5.

Acquisition Strategy: The FAAD GBS pre-production contract was awarded on a competitive best value basis with options for Low Rate Initial Production and Full Rate Production.

FY 1996 Accomplishments:

500 Completed reliability testing500

Total

FY 1997 Planned Program: Project not funded in FY 97

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program: Project not funded in FY 99

Project DE10

Page 1 of 3 Pages

Exhibit R-2 (PE 0604820A)

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development						2)	coludiy 1997	97
	PE NU 000	PE NUMBER AND TITLE 0604820A Rada	⊤∟E adar Dev	ट गापट Radar Development] 		E O	PROJECT DE10
B. Project Change Summary FY 1997 President's Budget Appropriated Value Adjustments to Appropriated Value FY 1998 Pres Bud Request	FY 1996 FY 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	FY 1997 0	FY 1998 0	FY 1999 0	6/ O O		ì	
Change Summary Explanation: Funding: FY 96 - Funding reprogrammed from 0604270A.DL18 to support reliability testing (+500)	d from 0604270	A.DL18 to su	ipport reliab	ility testing ((+200)			
C. Other Program Funding Summary FY 1996 FY 1997	97 FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	$\overline{\mathrm{FY}2003}$	To	Total
Other Procurement, Army 2 (SSN WK 5053) 61882 68783 Spares (SSN BS 9732) 2324 3610	83 41014 10 5258	40071 5382	34283	51545	16688	34206	<u>Compl</u> 28111	Cost 386245 16574
D. Schedule Profile FY 1996	F	FY 1997	-	FY 1998	∞ ′	- -	FY 1999	•
	××	•				. ×		-
	,							
Project DE10	Page 2 of 3 Pages	3 Pages			Exhibit	Exhibit R-2 (PE 0604820A)		Itom 106

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RDT&E PROGRAM ELEMENT/PRO.	PROJECT C	OST BR	EAKDC	COST BREAKDOWN (R-3)	3)	DATE F	February 1997	997
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	=	PE NUMBER AND TITLE 0604820A Rada	ND TITLE Radar	эттге Radar Development	nent			PROJECT DE10
 A. <u>Project Cost Breakdown</u> Test Support Total 	<u>FY 1996</u> 500 500	FY 1997	<u> 76</u>	FY 1998	FY 1999			
B. Budget Acquisition History and Planning Information								
Organizations r Contract		•						
Award or Performing Obligation Activity <u>Date</u> <u>EAC</u>	Project Office EAC	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Development Organizations ircraft C/FFP Feb 92 56836	56836	56836					17128	73964
Company MICOM MIPR Other/Misc. MIPR		18704 5270						18704
Support and Management Organizations MICOM MIPR Other/Misc. MIPR		20125 1707					6161	22044
Test and Evaluation Organizations OPTEC MIPR Other/Misc. MIPR TECOM MIPR		24180 7703 1133	200				5781	24180 7703 7414
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		80810 21832 33016 135658	500				17128 1919 5781 24828	97938 23751 39297 160986
Project DE10	Page	Page 3 of 3 Pages			Exhi	Exhibit R-3 (PE 0604820A)	0604820A)	
		1073						Item 106

RDT&E BUDGET ITEM JUS	EM JUS	TIFICA	TION SI	TIFICATION SHEET (R-2 Exhibit)	2 Exhil	bit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developme	Jevelopm	ent	PE NI 0 6 0	PE NUMBER AND TITLE 0604823A Firefinder	ттге irefinder				<u> </u>	PROJECT DL85
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
DL85 Firefinder Pre-Planned Product Improvement	0	2496	2564	12022	23248	24000	5788	0	0	70118

Radar by replacing the Antenna Transceiver Group (ATG). This upgrade is in response to the approved Mission Need Statement (MNS) for the Advanced Firefinder System A. Mission Description and Budget Item Justification: The Firefinder Pre-Planned Product Improvement (P31) program will upgrade the AN/TPQ-37 Artillery Locating signal processor. The Firefinder P3I will be integrated into the targeting structure by interfacing with the Advanced Field Artillery Tactical Data System (AFATDS). A new throughput to 50 targets per minute in a highly mobile, transportable and survivable system. The Firefinder P3I will also be capable of missile detection at maximum ranges deployment. Crew size will be reduced. This program will also leverage off the AN/TPQ-36(V)8 Electronics Upgrade program by using the same modern shelter and radar AN/TPQ-37 (Block II) Pre-Planned Product Improvement (P31) was approved 25 Sep 96. This upgrade will double the current range performance and improve the target of 150-300 km and will be capable of interfacing with Theater Missile Defense Systems. The system will be capable of C-130 roll-on/roll-off transportability for rapid which describes an urgent need for a more survivable, longer range and less manpower intensive radar. An Operational Requirements Document (ORD) for Firefinder PE/Project beginning in FY 97 was established for this Materiel Change (MC). This MC will be in the Engineering and Manufacturing Development phase of the acquisition cycle and is therefore correctly placed in Budget Activity 5.

Acquisition Strategy: A replacement for the Antenna Transceiver Group will be developed as an upgrade to the AN/TPQ-37 on a competitive basis.

FY 1996 Accomplishments: Project not funded in FY96.

FY 1997 Planned Program:

- Award multiple study contracts for evaluation of program risks and cost/performance trade-offs
 - Prepare program and cost documentation to support a Milestone II decision
- Prepare and release draft solicitation for industry comment
- Finalize and issue solicitation to award an EMD contract in FY 98
- Conduct Integrated Process Team (IPT) with industry to finalize system specification 285
- Prepare Analysis of Alternatives (AOA) and Threat Analysis
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs



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Project DL85

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Exhibit R-2 (PE 0604823A)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICAT	-IS NOI	EET (R	-2 Exhit	oit)		DATE Fe	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Developmo	ent	PE NU 0 00	PE NUMBER AND TITLE 0604823A Firefinder	ite irefinder				P	PROJECT DL85
 FY 1998 Planned Program: 384 Conduct Source Selection Evaluation Board (SSEB) 1956 Award EMD contract and initiate hardware/software design of new ATG 224 Conduct hardware Preliminary Design Review (PDR) Total 2564 	lluation Board iate hardware/, / Design Revie	(SSEB) software des ew (PDR)	ign of new /	\TG						
FY 1999 Planned Program: 1790 Complete hardware design 287 Conduct Critical Design Review (CDR) 8922 Begin prototype fabrication 1023 Integrate the AN/TPQ-36(V)8 Electronics Shelter with new ATG	ew (CDR) Electronics S	helter with n	ew ATG							
B. Project Change Summary FY 1997 President's Budget Appropriated Value		FY 1996 0 0	FY	FY 1997 551 2496	FY 1998 2839	FY 1999 13234	<u>99</u> 34			
Adjustments to Appropriated Value FY 1998/Pres Bud Request		0		2496	2564	12022	22			
C. Other Program Funding Summary Other Procurement, Army 2 SSN: BA5100 Firefinder P31	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001 67455	FY 2002 97084	FY 2003 129312	To Compl 458000	Total Cost 751851
D. Schedule Profile	FÝ 1996 2. 3	4	F)	FY 1997 2 3	1	FY 1998 2 3	98 3 4	_	FY 1999 2 3	4
Conduct IPTs Award BAA contracts Prepare Analysis of Alternatives (AOA) Prepare and release draft solicitation Finalize and issue solicitation for EMD				×	×					
F 196 award Complete documentation for Milestone II Obtain Milestone II Approval					××					
Project DL85			Page 2 of 5 Pages	5 Pages			Exhibi	Exhibit R-2 (PE 0604823A))604823A)	
			1075							Item 107

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R-2 Exhibit)	DATE February 1997
and Manufacturing Dev	PE NUMBER AND TITLE 0604823A Firefinder	PROJECT DL85
Conduct SSEB Award EMD Contract Begin prototype fabrication Integrate AN/TPQ-36(V)8 Shelter	FY 1997 FY 1998 X X X X Y Y Y Y Y Y Y Y Y	8 FY 1999 X X X X X X X X X X X X X X X X X X
Project DL85	Page 3 of 5 Pages	Exhibit R-2 (PE 0604823A)
	1076	Item 107



RDT&E PROGRAM ELEMENT/PRO	PROJECT C	COST BREAKDOWN (R-3)	4KD0	WN (R-3		DATE F6	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	<u></u>	PE NUMBER AND TITLE 0604823A Firef	этітге Firefinder	er			1	PROJECT DL85
A. Project Cost Breakdown Specification/Technical Parameters Development Primary Hardware Development System Engineering Government Contractor Source Selection Evaluation Board	FY 1996	FY 1997 1422 663	· '	FY 1998 1796 168 80 384	FY 1999 11057 369 156			
Program Management Personnel SBIR/STTR Total		200 61 2496		136	440 12022			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	Project Office <u>EAC</u>	Total Prior to FY 1996 FY	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
Product Development Organizations TBD C/CPIF Mar 98 Misc. BAA/FFP Jan 97 CECOM MIPR SSEB MIPR	57080 700 384			700 722	384	11057	44227	57080 700 722 384
Support and Management Organizations Misc. CECOM MIPR SBIR/STTR				150 863 61	216	596 369	2643 1620	3605 3020 61
Test and Evaluation Organizations White Sands MIPR Yuma MIPR Misc. Government Furnished Property: Not Applicable							2113 1410 1273	2113 1410 1273
Project DL85	Page	Page 4 of 5 Pages 1077		į	Exhi	Exhibit R-3 (PE 0604823A)	06048 <u>2</u> 3A)	Item 107

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COSTB	REAKDO	JWN (R-	3)	DATE	February 1997	25
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604823A Firef	AND TITLE	der				PROJECT DL85
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1996	FY 1996	FY 1997 1422 1074 2496	FY 1998 2180 384 2564	FY 1999 11057 965 12022	Budget to Complete 44227 4263 4796 53286	Total Program 58886 6686 4796 70368
Project DL85	Page 5 of 5 Pages	ss		Exhil	Exhibit R-3 (PE 0604823A)		Item 107
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FEM JUS	TIFICA	TION S	JEET (F	اا	bit)		DATE Fet	February 1997	26
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developn	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604854A Artill Development	PE NUMBER AND TITLE OG04854A Artillery Systems - Engineering Development	ystems	Enginee	ring		
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	2937	0	897	313993	437444	434029	206133	Continuing	Continuing
D503 Crusader - ED	0	0	0	0	311211	434690	433920	202648	Continuing	Continuing
D509 ATCAS	0	2937	0	368	1626	2647	0	0	0	7608
D2KT Crusader Operational Test	0	0	0	499	1156	107	109	3485	Continuing	Continuing

Mission Description and Budget Item Justification: This new program element supports the engineering and manufacturing development efforts for the Crusader-ED program and Advanced Field Artillery System Operational Test. This element also supports the Advanced Towed Cannon Artillery System (ATCAS). The projects in this program support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

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Exhibit R-2 (PE 0604854A)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICA.	TION SI	HEET (R	1-2 Exhi	bit)		DATE Fel	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	evelopm	lent	PE N 060 Dev	PE NUMBER AND TITLE 0604854A Artillery Systems - Engineering Development	TITLE Artillery S at	ystems	. Engine	ering		PROJECT D509
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D509 ATCAS	0	2937	0	398	1626	2647	0	0	0	7608

A. Mission Description and Justification: Advanced Towed Cannon Artillery System (ATCAS) will provide the replacement for the M198 155mm Howitzer and achieve significant strategic and tactical mobility improvements. This is a joint program with the Marine Corps as the lead service funding the development of the basic howitzer. The Army will fund the research and development of the product improvements to include: Inertial Navigation System, Electric Drives for Automated Elevation and Deflection Control, a Semi-Automated Loader, Laser Ignition System and Digital Direct Fire Sight.

integration is expected to be done by the howitzer prime contractor. The development of the digital fire control will leverage the demonstration hardware developed as part Acquisition Strategy: To develop and integrate the product improvements on the USMC-developed howitzer. Development will be primarily by subcontract, while of the Rapid Force Projection Initiative (RFPI) program and software developed by PM Paladin.

FY 1996 Accomplishments: Project not funded in FY 96

FY 1997 Planned Program:

- Perform P31 integration efforts on to the LW155 EMD Howitzer
- Continue engineering efforts to incorporate the laser ignition system in the towed platform 400
- Create LW towed howitzer and P3I component simulations to reduce technical risk and evaluate engineering change proposals
- Conduct a 52Caliber trade-off study to determine cost, weight, reliability tradeoffs if a 52cal cannon assembly were applied to the LW155 Howitzer
 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs

FY 1998 Planned Program: Project not funded in FY 98

FY 1999 Planned Program:

- 398 Initiate integrated Early User Test /Engineering Development

Project D509

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Exhibit R-2 (PE 0604854A)





RDT&E BUDGET ITEM JUS		TIFICATION SHEET (R-2 Exhibit)	HEET (R.	-2 Exhib	it)		DATE Feb	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	Development	PE NI 060	PE NUMBER AND TITLE 0604854A Artill Development	π∟E rtillery S∖ t	PE NUMBER AND TITLE 0604854A Artillery Systems - Engineering Development	ngineel	ring	E Q	РRОЈЕСТ D509
B. Project Change Summary FY 1997 President's Budget Appropriated Value	FY 1996 0		FY 1997 0 2937	FY 1998 0	FY 1999 412				
Adjustments to Appropriated Value FY 1998 President's Budget Request		0	2937	0	398				
Change Summary Explanation: Funding: FY 1997(+2937) Congressional increase to support the joint of LW155 Howitzer Program.	;; FY 1997(+2937) Con	gressional incr	ease to suppor	t the joint of	LW155 How	itzer Progr	am.		
C. Other Program Funding Summary	FY 1996 FY 1997	27 FY 1998	FY 1999	FY 2000	FY 2001 F	FY 2002	FY 2003	To Compl	Total Cost
RDTE, Marine Corps, PE 060635, C2112 Procurement Marine Corps, BLIN 218500 Procurement, Army WTCV, SSN G01700	14,392 13,269	59 35,303	33,915 7,590	8,624 106,359	148,435	142,081	142,034 4631	198,578 Cont	71,558 745,077 Cont
D. Schedule Profile	FY 1996	1 C	FY 1997	1	FY 1998	4		FY 1999 2 3	4
P31 Integration Efforts on the LW155 Perform Laser Ignition Integration Initiate/Develop Component Simulations Conduct Trade off Study Initiate Evaluation of Automated FC		· ××					×		
Project D509		Page 3 of 7 Pages	7 Pages			Exhibit	Exhibit R-2 (PE 0604854A)	304854A)	
		1001							Item 108

RDT&E	PROG	RDT&E PROGRAM ELEMENT/	EMENT/PRO	JECT (SOST BI	ZEAKD(PROJECT COST BREAKDOWN (R-3)	<u></u>	DATE F	February 1997	197
BUDGET ACTIVITY 5 - Engineering and Manufacturing Developm	id Manuf	acturing C	Development		PE NUMBER AND TITLE 0604854A Artill Development	AND TITLE IA Artille Iment	PE NUMBER AND TITLE 0604854A Artillery Systems - Engineering Development	ıs - Engin	eering	1	РРОЈЕСТ D509
A. Project Cost Breakdown Government Engineering Support Contractor Engineering Support Program Management Support SBIR/STTR Total	<u>own</u> Support upport pport			FY 1996	FY 1	FY 1997 1,365 1,400 100 72 2937	FY 1998	FY 1999 298 100 398			
B. Budget Acquisition History and Planning Information	listory and	Planning Info	ormation								
Performing Organizations Contractor or Contract Government Method/Type Performing or Funding Organizations Product Development Organizations	ations Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1996	FY 1996	FY 1997	FY 1998	FY 1999	Budget to Complete	Total Program
ARDEC-Picatinny 1095 Benet Labs 1095 Contractor -TBD SS/Cl	1095 1095 SS/CPIF	Feb 97 Feb 97 Mar 97	TBD TBD TBD		0 0 0		885 550 1330 72		298	3,400	1956 550 4730 72
Support and Management Organizations PM-JLW Feb 9 Test and Evaluation Organizations: None	nt Organiza ;anizations:	itions Feb 97 None	TBD		0		100		100	100	300
Government Furnished Property: None	Property: 1	Jone									
Subtotal Product Development Subtotal Support and Management	ment lagement						2837 100		298 100	4173	7308
Subford 1556 and Evaluati Total Project							2937		398	4273	7608
Project D509				Pago	Page 4 of 7 Pages	S.		Exh	Exhibit R-3 (PE 0604854A)	0604854A)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUS	TIFICA	TION SI	HEET (R	-2 Exhil	oit)		DATE Fel	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	Developm	ent	PE NI 060 Dev	PE NUMBER AND TITLE 0604854A Artill Development	PE NUMBER AND TITLE 0604854A Artillery Systems - Engineering Development	ystems -	Enginee	ering	1	PROJECT D2KT
COST (In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
D2KT Crusader Operational Test	0	0	0	499	1156	107	109	3485	Continuing	Continuing
A. Mission Description and Justification: Project D2KT Crusader Operational Test: Crusader operational testing will be conducted to answer issues relating to system effectiveness and suitability. Testing will be accomplished initially at section level (howitzer crew) and progress to battery and battalion levels to determine overall mission effectiveness and force structure suitability.	ct D2KT Crus nplished initi	ader Operat Ily at sectio	ional Test: (n level (how	Orusader ope itzer crew) a	rational testi nd progress t	ng will be co	onducted to	answer issue evels to dete	s relating to rmine overa	system Il mission
Acquisition Strategy: Not applicable										
FY 1996 Accomplishments: Project not funded in FY 96	FY 96									
FY 1997 Planned Program: Project not funded in FY 97	FY 97									
FY 1998 Planned Program: Project not funded in FY 98	FY 98									
FY 1999 Planned Program: • 499 Initiate integrated Early User Test/Engineering Development Tests. Total 499	. Test/Engine	ering Develc	pment Tests	ند						
B. Project Change Summary FY 1997 President's Budget		FY 1996 0		$\frac{\text{FY 1997}}{0}$	FY 1998 0	FY 1999 499	<u>999</u> 499			
Appropriated Value Adjustments to Appropriated Value FY 1998 President's Budget Request			0	0	0	4	499			
Project D2KT			Page 5 of 7 Pages	7 Pages			Exhibi	Exhibit R-2 (PE 0604854A)	604854A)	
			2001							Item 108

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM	JUST	IFICA1	ION SI	HEET (R	-2 Exhil	bit)		DATE Feb	February 1997	97
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	g Devel	opmer	4	PE NI 060 Dev	PE NUMBER AND TITLE 0604854A Artill Development	PE NUMBER AND TITLE 0604854A Artillery Systems - Engineering Development	ystems	Enginee	1	R O	PROJECT D2KT
C. Other Program Funding Summary	FY	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	To Compl	Total Cost
RD 1E A, Budget Activity 4, PE 0603645, Project D409 AFAS PE 0603645, Project DB88 FARV PE 0603854, Project D505 Crusader - AD RDTE A, Budget Activity 5, PE 0604854, Project D503 Crusader - EMD	13	13 <i>57</i> 24 45923	235795	322291	293920	47102	434690	433920	202648	Cont	546347 127370 899108 Cont
D. Schedule Profile	FY 1	FY 1996 2 3	4	1 2	FY 1997 2 3	4	FY 1998 2 3	88 3 4	1 2	Y 199	4
Initiate combined Early Developmental Testing/Early User Testing			<u>-</u>	Page 6 of 7 Pages	7 Pages	•	4		Exhibit R-2 (PE 0604854A)	0.4854A)	F
				1084						ľ	Item 108



RDT&E PROGRAM ELEMENT/PROJ	PROJECT COST BREAKDOWN (R-3)	BREAKD	JWN (R-3		DATE Fe	February 1997	97
вирсет астіліту 5 - Engineering and Manufacturing Development	PE NUM 0604 8	PE NUMBER AND TITLE 0604854A Artillery Systems - Engineering Development	ry Systems	s - Engine	ering	<u>я</u> О	PROJECT D2KT
A. Project Cost Breakdown Product Development Support and Management Test and Evaluation Total	FY 1996	FY 1997	EY 1998	FY 1999 499 499			
B. Budget Acquisition History and Planning Information:							
Performing Activity EAC	Project Total Office Prior to EAC FY 1996	ul o <u>EY 1996</u>	FY 1997	FY 1998	FY 1999	Budget to Complete	Total <u>Program</u>
Support and Management Organizations: None Test and Evaluation Organizations TECOM, YPG, AZ, CSTA, APG, MD, Ft. Sill, OK, OPTEC, VA					499	Cont	Cont
Government Furnished Property: None							
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project					499	Cont	Cont
Project D2KT	Page 7 of 7 Pages	Pages		Exhil	Exhibit R-3 (PE 0604854A)	0604854A)	
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APPENDIX A

SUMMARIES

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